

# SEQUENCE LISTING



<110> Statens Serum Institut  
Anderson, Peter

<120> M. Tuberculosis Antigens

<130> 670001-2002.4

<140> 09/804,980

<141> 2001-03-12

<160> 257

<170> PatentIn version 3.0

<210> 1

<211> 381

<212> DNA

<213> Mycobacterium tuberculosis

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tatcaggcgt ggcaggcaca gtggaaccag gccatggaag atttggtgcg ggcctatcat 300  
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<212> PRT

<213> Mycobacterium tuberculosis

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35 40 45

Ile Thr Tyr Gln Ala Trp Gln Ala Gln Trp Asn Gln Ala Met Glu Asp  
50 55 60

Leu Val Arg Ala Tyr His Ala Met Ser Ser Thr His Glu Ala Asn Thr

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 <213> Mycobacterium tuberculosis

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 gcgcccgggt ggtcgttctg gatggcaccg tctactgccga actcgaagcc gagggctggg 240  
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 <212> PRT  
 <213> Mycobacterium tuberculosis

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 35 40 45  
 Gly Leu Asp Val Ser Asp Arg Ile Arg Val Val Met Ser Val Pro Ala  
 50 55 60  
 Glu Arg Glu Asp Trp Ala Arg Thr His Arg Asp Leu Ile Ala Gly Glu  
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 <212> PRT  
 <213> Mycobacterium tuberculosis

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 35 40 45  
 Glu Gly Leu Pro Pro Gly Ser Ala Leu Leu Val Val Leu Arg Gly Pro  
 50 55 60  
 Asn Ala Gly Ser Arg Pro Leu Leu Asp Gln Ala Ile Thr Ser Ala Gly  
 65 70 75 80

Arg His Pro Asp Ser Asp Ile Pro Leu Asp Asp Val Thr Val Ser Arg  
85 90 95

Arg His Ala Glu Phe Arg Leu Glu Asn Asn Glu Phe Asn Val Val Asp  
100 105 110

Val Gly Ser Leu Asn Gly Thr Thr Val Asn Arg Glu Pro Val Asp Ser  
115 120 125

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Gly Pro

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<213> Mycobacterium tuberculosis

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<210> 8

<211> 165  
 <212> PRT  
 <213> Mycobacterium tuberculosis

<400> 8

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Arg	Thr	Phe	Asp	Glu	Arg	Ala	Ala	Ala	Ser	Gly	Ser	Thr	Val	Leu	Cys
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Val	Ser	Leu	Asp	Leu	Pro	Phe	Ala	Gln	Lys	Arg	Phe	Cys	Gly	Ala	Glu
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Gly	Thr	Glu	Asn	Val	Met	Pro	Ala	Ser	Ala	Phe	Arg	Asp	Ser	Phe	Gly
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Glu	Asp	Tyr	Gly	Val	Thr	Ile	Ala	Asp	Gly	Pro	Met	Ala	Gly	Leu	Leu
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Glu	Leu	Val	Pro	Glu	Ile	Ala	Gln	Glu	Pro	Asn	Tyr	Glu	Ala	Ala	Leu
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 <212> DNA  
 <213> Mycobacterium tuberculosis

<400> 9

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 <212> PRT  
 <213> Mycobacterium tuberculosis  
 <400> 10

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 35 40 45  
 Ala Ser Gly Leu Gly Asp Val Gly Glu Ala Phe Val Asp Ser Leu Thr  
 50 55 60  
 Ser Gln Val Gly Gly Arg Ser Ile Gly Val Tyr Ala Val Asn Tyr Pro  
 65 70 75 80  
 Ala Ser Asp Asp Tyr Arg Ala Ser Ala Ser Asn Gly Ser Asp Asp Ala  
 85 90 95  
 Ser Ala His Ile Gln Arg Thr Val Ala Ser Cys Pro Asn Thr Arg Ile  
 100 105 110  
 Val Leu Gly Gly Tyr Ser Gln Gly Ala Thr Val Ile Asp Leu Ser Thr  
 115 120 125  
 Ser Ala Met Pro Pro Ala Val Ala Asp His Val Ala Ala Val Ala Leu

130		135		140
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Ser Leu Pro Thr Ile Gly Pro Leu Tyr Ser Ser Lys Thr Ile Asn Leu				
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Cys Ala Pro Asp Asp Pro Ile Cys Thr Gly Gly Gly Asn Ile Met Ala				
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His Val Ser Tyr Val Gln Ser Gly Met Thr Ser Gln Ala Ala Thr Phe				
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 <212> DNA  
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 ccggacgccc tcacgccaag tccgtcacc tttggccgcg accggcgtaa ccggcagcgg 900  
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<211> 182  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 12

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Thr Lys Asp Tyr Ser Thr Gln Asn Ala Ser Gly Gly Pro Ser Gly Pro  
50 55 60  
Phe Tyr Asp Gly Ala Val Phe His Arg Val Ile Gln Gly Phe Met Ile  
65 70 75 80  
Gln Gly Gly Asp Pro Thr Gly Thr Gly Arg Gly Gly Pro Gly Tyr Lys  
85 90 95  
Phe Ala Asp Glu Phe His Pro Glu Leu Gln Phe Asp Lys Pro Tyr Leu  
100 105 110  
Leu Ala Met Ala Asn Ala Gly Pro Gly Thr Asn Gly Ser Gln Phe Phe  
115 120 125  
Ile Thr Val Gly Lys Thr Pro His Leu Asn Arg Arg His Thr Ile Phe  
130 135 140  
Gly Glu Val Ile Asp Ala Glu Ser Gln Arg Val Val Glu Ala Ile Ser  
145 150 155 160  
Lys Thr Ala Thr Asp Gly Asn Asp Arg Pro Thr Asp Pro Val Val Ile  
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Glu Ser Ile Thr Ile Ser  
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<210> 13  
<211> 1060  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 13

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<210> 14
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<212> PRT
<213> Mycobacterium tuberculosis

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<400> 14

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          35           40           45

Pro Gly Ile Gly Thr Val Gly Asn Ala Phe Val Ser Ala Leu Arg Ser
          50           55           60

Lys Val Asn Lys Asn Val Gly Val Tyr Ala Val Lys Tyr Pro Ala Asp
65           70           75           80

Asn Gln Ile Asp Val Gly Ala Asn Asp Met Ser Ala His Ile Gln Ser
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Met Ala Asn Ser Cys Pro Asn Thr Arg Leu Val Pro Gly Gly Tyr Ser
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Leu Gly Ala Ala Val Thr Asp Val Val Leu Ala Val Pro Thr Gln Met

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145		150		155
Asn Phe Ser Pro Ala Tyr Asn Asp Arg Thr Ile Glu Leu Cys His Gly				
	165		170	175
Asp Asp Pro Val Cys His Pro Ala Asp Pro Asn Thr Trp Glu Ala Asn				
	180		185	190
Trp Pro Gln His Leu Ala Gly Ala Tyr Val Ser Ser Gly Met Val Asn				
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210		215		

<210> 15  
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 <212> DNA  
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<210> 16  
<211> 265  
<212> PRT  
<213> Mycobacterium tuberculosis  
<400> 16

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Gly	Arg	Arg	Val	Val	Asp	Val	Ser	Asp	Pro	Gly	Gly	Pro	Val	Thr	Ala
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Ala	Val	Ser	Thr	Gly	Arg	Leu	Ile	Asp	Val	Lys	Ala	Pro	Thr	Asn	Gly
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Val	Ile	Ala	His	Leu	Arg	Ala	Ser	Lys	Pro	Leu	Val	Arg	Leu	Arg	Val
65					70					75					80
Pro	Phe	Thr	Leu	Ser	Arg	Asn	Glu	Ile	Asp	Asp	Val	Glu	Arg	Gly	Ser
				85					90					95	
Lys	Asp	Ser	Asp	Trp	Glu	Pro	Val	Lys	Glu	Ala	Ala	Lys	Lys	Leu	Ala
			100					105					110		
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Glu	His	Leu	Asn	Arg	Leu	Val	Asp	Gly	Asp	Ile	Ile	Trp	Ala	Pro	Ala
			195				200					205			
Ile	Asp	Gly	Ala	Phe	Val	Leu	Thr	Thr	Arg	Gly	Gly	Asp	Phe	Asp	Leu

210                      215                      220  
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<210> 17  
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 <213> Mycobacterium tuberculosis

<220>  
 <221> MISC\_FEATURE  
 <222> (13)..(13)  
 <223> "Xaa" is unknown

<220>  
 <221> variant  
 <222> (1)..(1)  
 <223> Ala is Ala or Ser

<400> 17

Ala Glu Leu Asp Ala Pro Ala Gln Ala Gly Thr Glu Xaa Ala Val  
 1                      5                      10                      15

<210> 18  
 <211> 15  
 <212> PRT  
 <213> Mycobacterium tuberculosis

<400> 18

Ala Gln Ile Thr Leu Arg Gly Asn Ala Ile Asn Thr Val Gly Glu  
 1                      5                      10                      15

<210> 19  
 <211> 15  
 <212> PRT  
 <213> Mycobacterium tuberculosis

<220>  
 <221> MISC\_FEATURE  
 <222> (3)..(3)  
 <223> "Xaa" is unknown

<400> 19

Asp Pro Xaa Ser Asp Ile Ala Val Val Phe Ala Arg Gly Thr His

1 5 10 15

<210> 20  
<211> 15  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 20

Thr Asn Ser Pro Leu Ala Thr Ala Thr Ala Thr Leu His Thr Asn  
1 5 10 15

<210> 21  
<211> 15  
<212> PRT  
<213> Mycobacterium tuberculosis

<220>  
<221> MISC\_FEATURE  
<222> (2)..(2)  
<223> "Xaa" is unknown

<400> 21

Ala Xaa Pro Asp Ala Glu Val Val Phe Ala Arg Gly Arg Phe Glu  
1 5 10 15

<210> 22  
<211> 15  
<212> PRT  
<213> Mycobacterium tuberculosis

<220>  
<221> variant  
<222> (14)..(14)  
<223> Asp is Asp or Gln

<220>  
<221> variant  
<222> (10)..(10)  
<223> Val is Val or Thr

<220>  
<221> variant  
<222> (2)..(2)  
<223> Ile is Ile or Val

<220>  
<221> variant  
<222> (11)..(11)  
<223> Val is Phe or Val

<220>  
<221> MISC\_FEATURE  
<222> (1)..(1)  
<223> "Xaa" is unknown

<400> 22

Xaa Ile Gln Lys Ser Leu Glu Leu Ile Val Val Thr Ala Asp Glu  
1 5 10 15

<210> 23  
<211> 19  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 23

Met Asn Asn Leu Tyr Arg Asp Leu Ala Pro Val Thr Glu Ala Ala Trp  
1 5 10 15

Ala Glu Ile

<210> 24  
<211> 34  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 24  
ccggctcga gaacctstac cgcgacctsg csc

34

<210> 25  
<211> 37  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 25  
gggcccgatc cgasgcs gcg tccttsacsg gytgcc

37

<210> 26  
<211> 28  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 26  
ggaagcccca tatgaacaat ctctaccg

28

<210> 27  
<211> 32  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 27

cgcgctcagc ccttagtgac tgagcgcgac cg 32

<210> 28  
<211> 24  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 28  
ctcgaattcg ccgggtgcac acag 24

<210> 29  
<211> 25  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 29  
ctcgaattcg ccccatatcg agaac 25

<210> 30  
<211> 15  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 30  
gtgtatctgc tggac 15

<210> 31  
<211> 15  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 31  
ccgactggct ggccg 15

<210> 32  
<211> 24  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 32  
gaggaattcg cttagcggat cgca 24

<210> 33  
<211> 15  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 33  
cccacattcc gttgg 15

<210>	34	
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<212>	DNA	
<213>	Mycobacterium tuberculosis	
<400>	34	
	gtccagcaga tacac	15
<210>	35	
<211>	27	
<212>	DNA	
<213>	Mycobacterium tuberculosis	
<400>	35	
	gtacgagaat tcatgtcgca aatcatg	27
<210>	36	
<211>	27	
<212>	DNA	
<213>	Mycobacterium tuberculosis	
<400>	36	
	gtacgagaat tcgagcttgg ggtgccg	27
<210>	37	
<211>	28	
<212>	DNA	
<213>	Mycobacterium tuberculosis	
<400>	37	
	cgattccaag cttgtggccg ccgaccg	28
<210>	38	
<211>	30	
<212>	DNA	
<213>	Mycobacterium tuberculosis	
<400>	38	
	cgttagggat cctcatcgcc atggtgttgg	30
<210>	39	
<211>	26	
<212>	DNA	
<213>	Mycobacterium tuberculosis	
<400>	39	
	cgttagggat ccggttccac tgtgcc	26
<210>	40	
<211>	28	
<212>	DNA	



<213> Mycobacterium tuberculosis

<400> 40

cgtttagggat cctcaggtct tttcgatg

28

<210> 41

<211> 952

<212> DNA

<213> Mycobacterium tuberculosis

<400> 41

gaattcgccg ggtgcacaca gccttacacg acggaggtgg acacatgaag ggtcggtcgg 60

cgctgctgcg ggcgctctgg attgccgcac tgtcattcgg gttgggcggt gtcgcggtag 120

ccgcggaacc caccgccaag gccgccccat acgagaacct gatggtgccg tcgccctcga 180

tgggcccggga catcccggtg gccttcctag ccggtggggc gcacgcggtg tatctgctgg 240

acgccttcaa cgccggcccc gatgtcagta actgggtcac cgcgggtaac gcgatgaaca 300

cgttggcggg caaggggatt tcggtggtgg caccggccgg tggtgcgtag agcatgtaca 360

ccaactggga gcaggatggc agcaagcagt gggacacctt cttgtccgct gagctgcccg 420

actggctggc cgctaaccgg ggcttggccc ccggtggcca tgcggccggt ggcgccgctc 480

agggcggtta cggggcgatg gcgctggcgg ccttcacccc cgaccgcttc ggcttcgctg 540

gctcgatgtc gggctttttg taccgctcga acaccaccac caacggtgcg atcgcggcgg 600

gcatgcagca attcggcggg gtggacacca acggaatgtg gggagcacca cagctgggtc 660

ggtggaagtg gcacgacccg tgggtgcatg ccagcctgct ggcgcaaaac aacacccggg 720

tgtgggtgtg gagcccgacc aaccggggag ccagcgatcc cgccgccatg atcggccaaa 780

ccgccgaggg gatgggtaac agccgcatgt tctacaacca gtatcgacgc gtcggcgggc 840

acaacggaca cttcgacttc ccagccagcg gtgacaacgg ctggggctcg tgggcgcccc 900

agctgggcgc tatgtcgggc gatatcgctg gtgcgatccg ctaagcgaat tc 952

<210> 42

<211> 298

<212> PRT

<213> Mycobacterium tuberculosis

<400> 42

Met Lys Gly Arg Ser Ala Leu Leu Arg Ala Leu Trp Ile Ala Ala Leu  
1 5 10 15

Ser Phe Gly Leu Gly Gly Val Ala Val Ala Ala Glu Pro Thr Ala Lys  
20 25 30



<400> 43  
gcaacacccg ggatgtcgca aatcatg 27

<210> 44  
<211> 27  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 44  
gtaacacccg gggtagccgc cgacccg 27

<210> 45  
<211> 37  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 45  
ctactaagct tggatcccta gccgccccat ttggcgg 37

<210> 46  
<211> 38  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 46  
ctactaagct tccatgggtca ggtcttttcg atgcttac 38

<210> 47  
<211> 450  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 47  
gtgccgcgct ccccaggggt cttatgggtc gatatacctg agtttgatgg aagtccgatg 60  
accagcagtc agcatacggc atggccgaaa agagtggggg gatgatggcc gaggatgttc 120  
gcgccgagat cgtggccagc gttctcgaag tcgttgtcaa cgaaggcgat cagatcgaca 180  
agggcgacgt cgtgggtgctg ctggagtcga tgaagatgga gatccccgtc ctggccgaag 240  
ctgccggaac ggtcagcaag gtggcggtat cggtagggcg tgcattcag gccggcgacc 300  
ttatcgcggg gatcagctag tcgttgatag tcaactcatgt ccacactcgg tgatctgctc 360  
gccgaacaca cgggtgctgcc gggcagcgcg gtggaccacc tgcatgcggg ggtcggggag 420  
tggcagctcc ttgccgactt gtcgtttgcc 450

<210> 48  
<211> 71  
<212> PRT

<213> Mycobacterium tuberculosis

<400> 48

Met Ala Glu Asp Val Arg Ala Glu Ile Val Ala Ser Val Leu Glu Val  
1 5 10 15

Val Val Asn Glu Gly Asp Gln Ile Asp Lys Gly Asp Val Val Val Leu  
20 25 30

Leu Glu Ser Met Lys Met Glu Ile Pro Val Leu Ala Glu Ala Ala Gly  
35 40 45

Thr Val Ser Lys Val Ala Val Ser Val Gly Asp Val Ile Gln Ala Gly  
50 55 60

Asp Leu Ile Ala Val Ile Ser  
65 70

<210> 49

<211> 749

<212> DNA

<213> Mycobacterium tuberculosis

<400> 49

gggtacccat cgatggggtg cggttcggca ccgaggtgct aacgcacttg ctgacacact 60  
gctagtcgaa aacgaggcta gtcgcaacgt cgatcacacg agaggactga ccatgacaac 120  
ttcacccgac ccgatgcccg cgctgcccaa gctgccgtcc ttcagcctga cgtcaacctc 180  
gatcacccgat gggcagccgc tggctacacc ccaggtcagc gggatcatgg gtgcggggcg 240  
ggcggatgcc agtccgcagc tgaggtggtc gggatttccc agcgagaccc gcagcttcgc 300  
ggtaaccgtc tacgaccctg atgccccac cctgtccggg ttctggcact gggcgggtggc 360  
caacctgcct gccaacgtca ccgagttgcc cgaggggtgc ggcatggcc gcgaactgcc 420  
gggcggggca ctgacattgg tcaacgacgc cggtatgcgc cggtatgtgg gtgcggcgcc 480  
gcctcccggg catggggtgc atcgctacta cgtcgcggta cacgcggtga aggtcgaaaa 540  
gctcgacctc cccgaggacg cgagtcctgc atatctggga ttcaacctgt tccagcacgc 600  
gattgcacga gcggtcatct tcggcaccta cgagcagcgt tagcgcttta gctggggtgc 660  
cgacgtcttg ccgagccgac cgcttcgtgc agcgagccga acccgccgtc atgcagcctg 720  
gggcaatgcc ttcattgatg tccttggcc 749

<210> 50

<211> 176

<212> PRT

<213> Mycobacterium tuberculosis

<400> 50

Met Thr Thr Ser Pro Asp Pro Tyr Ala Ala Leu Pro Lys Leu Pro Ser  
1 5 10 15  
Phe Ser Leu Thr Ser Thr Ser Ile Thr Asp Gly Gln Pro Leu Ala Thr  
20 25 30  
Pro Gln Val Ser Gly Ile Met Gly Ala Gly Gly Ala Asp Ala Ser Pro  
35 40 45  
Gln Leu Arg Trp Ser Gly Phe Pro Ser Glu Thr Arg Ser Phe Ala Val  
50 55 60  
Thr Val Tyr Asp Pro Asp Ala Pro Thr Leu Ser Gly Phe Trp His Trp  
65 70 75 80  
Ala Val Ala Asn Leu Pro Ala Asn Val Thr Glu Leu Pro Glu Gly Val  
85 90 95  
Gly Asp Gly Arg Glu Leu Pro Gly Gly Ala Leu Thr Leu Val Asn Asp  
100 105 110  
Ala Gly Met Arg Arg Tyr Val Gly Ala Ala Pro Pro Pro Gly His Gly  
115 120 125  
Val His Arg Tyr Tyr Val Ala Val His Ala Val Lys Val Glu Lys Leu  
130 135 140  
Asp Leu Pro Glu Asp Ala Ser Pro Ala Tyr Leu Gly Phe Asn Leu Phe  
145 150 155 160  
Gln His Ala Ile Ala Arg Ala Val Ile Phe Gly Thr Tyr Glu Gln Arg  
165 170 175

<210> 51

<211> 800

<212> DNA

<213> Mycobacterium tuberculosis

<400> 51

tcatgagggt catcggggtg atcccacgcc cgcagccgca ttcgggccgc tggcgagccg 60  
gtgccgcacg ccgcctcacc agcctggtgg ccgccgcctt tgcggcggcc aactgttgc 120  
ttacccccgc gctggcacca ccggcatcgg cgggctgccc ggatgccgag gtggtgttcg 180  
cccgcggaac cggcgaacca cctggcctcg gtcgggtagg ccaagctttc gtcagttcat 240  
tgcgccagca gaccaacaag agcatcggga catacggagt caactaccg gccaacggtg 300  
atttcttggc cgccgctgac ggcgcgaacg acgccagcga ccacattcag cagatggcca 360  
gcgcgtgccg ggccacgagg ttggtgctcg gcggctactc ccagggtgcg gccgtgatcg 420  
acatcgtcac cgccgcacca ctgcccggcc tcgggttcac gcagccgttg ccgccgcag 480

cggacgatca catcgccgcg atcgccctgt tcgggaatcc ctcgggccgc gctggcgggc 540  
 tgatgagcgc cctgaccctt caattcgggt ccaagaccat caacctctgc aacaacggcg 600  
 acccgatttg ttcggacggc aaccggtggc gagcgcacct aggctacgtg cccgggatga 660  
 ccaaccaggc ggcgcgtttc gtcgcgagca ggatctaacy cgagccgccc catagattcc 720  
 ggctaagcaa cggctgcgcc gccgccggc cactgagtac cgccgccgac tggcacaccg 780  
 cttaccacgg ccttatgctg 800

<210> 52  
 <211> 226  
 <212> PRT  
 <213> Mycobacterium tuberculosis

<400> 52

Met	Ile	Pro	Arg	Pro	Gln	Pro	His	Ser	Gly	Arg	Trp	Arg	Ala	Gly	Ala	1	5	10	15
Ala	Arg	Arg	Leu	Thr	Ser	Leu	Val	Ala	Ala	Ala	Phe	Ala	Ala	Ala	Thr	20	25	30	
Leu	Leu	Leu	Thr	Pro	Ala	Leu	Ala	Pro	Pro	Ala	Ser	Ala	Gly	Cys	Pro	35	40	45	
Asp	Ala	Glu	Val	Val	Phe	Ala	Arg	Gly	Thr	Gly	Glu	Pro	Pro	Gly	Leu	50	55	60	
Gly	Arg	Val	Gly	Gln	Ala	Phe	Val	Ser	Ser	Leu	Arg	Gln	Gln	Thr	Asn	65	70	75	80
Lys	Ser	Ile	Gly	Thr	Tyr	Gly	Val	Asn	Tyr	Pro	Ala	Asn	Gly	Asp	Phe	85	90	95	
Leu	Ala	Ala	Ala	Asp	Gly	Ala	Asn	Asp	Ala	Ser	Asp	His	Ile	Gln	Gln	100	105	110	
Met	Ala	Ser	Ala	Cys	Arg	Ala	Thr	Arg	Leu	Val	Leu	Gly	Gly	Tyr	Ser	115	120	125	
Gln	Gly	Ala	Ala	Val	Ile	Asp	Ile	Val	Thr	Ala	Ala	Pro	Leu	Pro	Gly	130	135	140	
Leu	Gly	Phe	Thr	Gln	Pro	Leu	Pro	Pro	Ala	Ala	Asp	Asp	His	Ile	Ala	145	150	155	160
Ala	Ile	Ala	Leu	Phe	Gly	Asn	Pro	Ser	Gly	Arg	Ala	Gly	Gly	Leu	Met	165	170	175	
Ser	Ala	Leu	Thr	Pro	Gln	Phe	Gly	Ser	Lys	Thr	Ile	Asn	Leu	Cys	Asn	180	185	190	
Asn	Gly	Asp	Pro	Ile	Cys	Ser	Asp	Gly	Asn	Arg	Trp	Arg	Ala	His	Leu				

195	200	205
Gly Tyr Val Pro Gly Met Thr Asn Gln Ala Ala Arg Phe Val Ala Ser		
210	215	220

Arg Ile  
225

<210> 53  
<211> 700  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 53  
ctaggaaagc ctttcctgag taagtattgc cttcgttgca taccgccctt tacctgcggt 60  
aatctgcatt ttatgacaga atacgaaggg cctaagacaa aattccacgc gttaatgcag 120  
gaacagattc ataacgaatt cacagcggca caacaatatg tcgcgatcgc ggtttatttc 180  
gacagcgaag acctgccgca gttggcgaag cattttttaca gccaaagcggc cgaggaacga 240  
aaccatgcaa tgatgctcgt gcaacacctg ctcgaccgcg accttcgtgt cgaaattccc 300  
ggcgtagaca cggtgcgaaa ccagttcgac agaccccgcg aggcactggc gctggcgctc 360  
gatcaggaac gcacagtcac cgaccaggtc ggtcggctga cagcgggtggc ccgcgacgag 420  
ggcgatttcc tcggcgagca gttcatgcag tggttcttgc aggaacagat cgaagaggcg 480  
gccttgatgg caaccctggg gcggggtgcc gatcggggccg gggccaacct gttcgagcta 540  
gagaacttcg tcgcacgtga agtggatgtg gcgccggccg catcaggcgc cccgcacgct 600  
gccggggggc gcctctagat ccctggcggg gatcagcgag tgggtcccgtt cgcccgcccc 660  
tcttccagcc aggccttggt gcggccgggg tggtgagtac 700

<210> 54  
<211> 181  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 54

Met Thr Glu Tyr Glu Gly Pro Lys Thr Lys Phe His Ala Leu Met Gln
1 5 10 15

Glu Gln Ile His Asn Glu Phe Thr Ala Ala Gln Gln Tyr Val Ala Ile
20 25 30

Ala Val Tyr Phe Asp Ser Glu Asp Leu Pro Gln Leu Ala Lys His Phe
35 40 45

Tyr Ser Gln Ala Val Glu Glu Arg Asn His Ala Met Met Leu Val Gln
50 55 60

His	Leu	Leu	Asp	Arg	Asp	Leu	Arg	Val	Glu	Ile	Pro	Gly	Val	Asp	Thr
65					70					75				80	
Val	Arg	Asn	Gln	Phe	Asp	Arg	Pro	Arg	Glu	Ala	Leu	Ala	Leu	Ala	Leu
			85						90					95	
Asp	Gln	Glu	Arg	Thr	Val	Thr	Asp	Gln	Val	Gly	Arg	Leu	Thr	Ala	Val
			100					105					110		
Ala	Arg	Asp	Glu	Gly	Asp	Phe	Leu	Gly	Glu	Gln	Phe	Met	Gln	Trp	Phe
		115					120					125			
Leu	Gln	Glu	Gln	Ile	Glu	Glu	Val	Ala	Leu	Met	Ala	Thr	Leu	Val	Arg
	130						135				140				
Val	Ala	Asp	Arg	Ala	Gly	Ala	Asn	Leu	Phe	Glu	Leu	Glu	Asn	Phe	Val
145					150					155					160
Ala	Arg	Glu	Val	Asp	Val	Ala	Pro	Ala	Ala	Ser	Gly	Ala	Pro	His	Ala
			165					170						175	
Ala	Gly	Gly	Arg	Leu											
			180												

<210> 55  
 <211> 950  
 <212> DNA  
 <213> Mycobacterium tuberculosis

<400> 55	
tgggctcggc actggctctc ccacggtggc gcgctgattt ctccccacgg taggcgttgc	60
gacgcatggt cttcaccgtc tatccacagc taccgacatt tgctccggct ggatcgcggg	120
taaaattccg tcgtgaacaa tcgaccatc cgctgctga catccggcag ggctggtttg	180
ggtgcgggcg cattgatcac cgccgtcgtc ctgctcatcg ccttggggcg tgtttggacc	240
ccggttgctt tcgccgatgg atgcccggac gccgaagtca cgttcgcccg cggcaccggc	300
gagccgcccg gaatcgggcg cgttggccag gcgctcgctg actcgctgcg ccagcagact	360
ggcatggaga tcggagtata cccggtgaat tacgccgcca gccgcctaca gctgcacggg	420
ggagacggcg ccaacgacgc catatcgac attaatcca tggcctcgtc atgccgaac	480
accaagctgg tcttgggagg ctattcgag ggcgcaaccg tgatcgatat cgtggccggg	540
gttcggttgg gcagcatcag ctttggcagt ccgctacctg cggcatacgc agacaacgtc	600
gcagcggtcg cggctcttcg caatccgtcc aaccgcgccg gcggatcgct gtcgagcctg	660
agcccgtat tcggttccaa ggcgattgac ctgtgcaatc ccaccgatcc gatctgccat	720
gtgggccccg gcaacgaatt cagcggacac atcgacggct acataccac ctacaccacc	780



caggcgggcta gtttcgtcgt gcagaggctc cgcgccgggt cggtgccaca tctgcttgga 840  
 tccgtcccg c agctgcccgg gtctgtcctt cagatgcccg gcactgccgc accgggtccc 900  
 gaatcgtgc acggtcgtg acgctttgtc agtaagccca taaaatcgcg 950

<210> 56  
 <211> 262  
 <212> PRT  
 <213> Mycobacterium tuberculosis

<400> 56

Met	Asn	Asn	Arg	Pro	Ile	Arg	Leu	Leu	Thr	Ser	Gly	Arg	Ala	Gly	Leu	
1				5					10					15		
Gly	Ala	Gly	Ala	Leu	Ile	Thr	Ala	Val	Val	Leu	Leu	Ile	Ala	Leu	Gly	
			20					25					30			
Ala	Val	Trp	Thr	Pro	Val	Ala	Phe	Ala	Asp	Gly	Cys	Pro	Asp	Ala	Glu	
		35					40				45					
Val	Thr	Phe	Ala	Arg	Gly	Thr	Gly	Glu	Pro	Pro	Gly	Ile	Gly	Arg	Val	
	50					55					60					
Gly	Gln	Ala	Phe	Val	Asp	Ser	Leu	Arg	Gln	Gln	Thr	Gly	Met	Glu	Ile	
65					70				75					80		
Gly	Val	Tyr	Pro	Val	Asn	Tyr	Ala	Ala	Ser	Arg	Leu	Gln	Leu	His	Gly	
				85					90					95		
Gly	Asp	Gly	Ala	Asn	Asp	Ala	Ile	Ser	His	Ile	Lys	Ser	Met	Ala	Ser	
			100					105					110			
Ser	Cys	Pro	Asn	Thr	Lys	Leu	Val	Leu	Gly	Gly	Tyr	Ser	Gln	Gly	Ala	
		115					120					125				
Thr	Val	Ile	Asp	Ile	Val	Ala	Gly	Val	Pro	Leu	Gly	Ser	Ile	Ser	Phe	
	130					135					140					
Gly	Ser	Pro	Leu	Pro	Ala	Ala	Tyr	Ala	Asp	Asn	Val	Ala	Ala	Val	Ala	
145					150				155					160		
Val	Phe	Gly	Asn	Pro	Ser	Asn	Arg	Ala	Gly	Gly	Ser	Leu	Ser	Ser	Leu	
			165						170					175		
Ser	Pro	Leu	Phe	Gly	Ser	Lys	Ala	Ile	Asp	Leu	Cys	Asn	Pro	Thr	Asp	
			180					185					190			
Pro	Ile	Cys	His	Val	Gly	Pro	Gly	Asn	Glu	Phe	Ser	Gly	His	Ile	Asp	
		195					200					205				
Gly	Tyr	Ile	Pro	Thr	Tyr	Thr	Thr	Gln	Ala	Ala	Ser	Phe	Val	Val	Gln	
	210					215					220					
Arg	Leu	Arg	Ala	Gly	Ser	Val	Pro	His	Leu	Pro	Gly	Ser	Val	Pro	Gln	

225                      230                      235                      240

Leu Pro Gly Ser Val Leu Gln Met Pro Gly Thr Ala Ala Pro Ala Pro  
                        245                      250                      255

Glu Ser Leu His Gly Arg  
                        260

1	5	10	15
Thr Pro Ala Val Asp Leu Ser Ser Phe Thr Asp Phe Leu Arg Arg Gln	20	25	30
Ala Pro Glu Leu Leu Pro Ala Ser Ile Ser Gly Gly Ala Pro Leu Ala	35	40	45
Gly Gly Asp Ala Gln Leu Pro His Gly Thr Thr Ile Val Ala Leu Lys	50	55	60
Tyr Pro Gly Gly Val Val Met Ala Gly Asp Arg Arg Ser Thr Gln Gly	65	70	80
Asn Met Ile Ser Gly Arg Asp Val Arg Lys Val Tyr Ile Thr Asp Asp	85	90	95
Tyr Thr Ala Thr Gly Ile Ala Gly Thr Ala Ala Val Ala Val Glu Phe	100	105	110
Ala Arg Leu Tyr Ala Val Glu Leu Glu His Tyr Glu Lys Leu Glu Gly	115	120	125
Val Pro Leu Thr Phe Ala Gly Lys Ile Asn Arg Leu Ala Ile Met Val	130	135	140
Arg Gly Asn Leu Ala Ala Ala Met Gln Gly Leu Leu Ala Leu Pro Leu	145	150	155
Leu Ala Gly Tyr Asp Ile His Ala Ser Asp Pro Gln Ser Ala Gly Arg	165	170	175
Ile Val Ser Phe Asp Ala Ala Gly Gly Trp Asn Ile Glu Glu Glu Gly	180	185	190
Tyr Gln Ala Val Gly Ser Gly Ser Leu Phe Ala Lys Ser Ser Met Lys	195	200	205
Lys Leu Tyr Ser Gln Val Thr Asp Gly Asp Ser Gly Leu Arg Val Ala	210	215	220
Val Glu Ala Leu Tyr Asp Ala Ala Asp Asp Asp Ser Ala Thr Gly Gly	225	230	235
Pro Asp Leu Val Arg Gly Ile Phe Pro Thr Ala Val Ile Ile Asp Ala	245	250	255
Asp Gly Ala Val Asp Val Pro Glu Ser Arg Ile Ala Glu Leu Ala Arg	260	265	270
Ala Ile Ile Glu Ser Arg Ser Gly Ala Asp Thr Phe Gly Ser Asp Gly	275	280	285
Gly Glu Lys	290		

<211> 899  
 <212> DNA  
 <213> Mycobacterium tuberculosis

<400> 59  
 ttggcccgcg cgatcatcga aagccgttcg ggtgcggata ctttcggctc cgatggcggg 60  
 gagaagtgag ttttccgtat ttcatctcgc ctgagcaggc gatgcgcgag cgcagcgagt 120  
 tggcgcgtaa gggcattgcg cgggccaaaa gcgtggtggc gctggcctat gccggtggtg 180  
 tgctgttcgt cgcggagaat ccgtcgcggg cgctgcagaa gatcagtgag ctctacgac 240  
 ggggtgggttt tgcggctgcg gcaagttcaa cgagttcgac aatttgcgcc gcggcgggat 300  
 ccagttcgcc gacaccgcg gttacgccta tgaccgtcgt gacgtcacgg gtcggcagtt 360  
 ggccaatgtc tacgcgcaga ctctaggcac catcttcacc gaacaggcca agccctacga 420  
 ggttgagttg tgtgtggccg aggtggcgca ttacggcgag acgaaacgcc ctgagttgta 480  
 tcgtattacc tacgacgggt cgatcgccga cgagccgcat ttcgtggtga tgggcggcac 540  
 cacggagccg atcgccaacg cgctcaaaga gtcgtatgcc gagaacgcca gcctgaccga 600  
 cgccctgcgt atcgcggtcg ctgcattgcg ggccggcagt gccgacacct cgggtggtga 660  
 tcaaccacc cttggcgtgg ccagcttaga ggtggccggt ctcgatgcca accggccacg 720  
 gcgcgcgttc cggcgcacga ccggctccgc cctgcaagcg ttgctggtag accaggaaag 780  
 cccgcagtct gacggcgaat cgtcgggctg agtccgaaag tccgacgcgt gtctgggacc 840  
 ccgctgcgac gttaactgcg cctaaccgcc gctcgacgcg tcgccggccg tcttgactt 899

<210> 60  
 <211> 248  
 <212> PRT  
 <213> Mycobacterium tuberculosis

<400> 60  
 Met Ser Phe Pro Tyr Phe Ile Ser Pro Glu Gln Ala Met Arg Glu Arg  
 1 5 10 15  
 Ser Glu Leu Ala Arg Lys Gly Ile Ala Arg Ala Lys Ser Val Val Ala  
 20 25 30  
 Leu Ala Tyr Ala Gly Gly Val Leu Phe Val Ala Glu Asn Pro Ser Arg  
 35 40 45  
 Ser Leu Gln Lys Ile Ser Glu Leu Tyr Asp Arg Val Gly Phe Ala Ala  
 50 55 60  
 Ala Gly Lys Phe Asn Glu Phe Asp Asn Leu Arg Arg Gly Gly Ile Gln  
 65 70 75 80

Phe Ala Asp Thr Arg Gly Tyr Ala Tyr Asp Arg Arg Asp Val Thr Gly  
                     85                    90                    95  
 Arg Gln Leu Ala Asn Val Tyr Ala Gln Thr Leu Gly Thr Ile Phe Thr  
                     100                    105                    110  
 Glu Gln Ala Lys Pro Tyr Glu Val Glu Leu Cys Val Ala Glu Val Ala  
                     115                    120                    125  
 His Tyr Gly Glu Thr Lys Arg Pro Glu Leu Tyr Arg Ile Thr Tyr Asp  
                     130                    135                    140  
 Gly Ser Ile Ala Asp Glu Pro His Phe Val Val Met Gly Gly Thr Thr  
 145                    150                    155                    160  
 Glu Pro Ile Ala Asn Ala Leu Lys Glu Ser Tyr Ala Glu Asn Ala Ser  
                     165                    170                    175  
 Leu Thr Asp Ala Leu Arg Ile Ala Val Ala Ala Leu Arg Ala Gly Ser  
                     180                    185                    190  
 Ala Asp Thr Ser Gly Gly Asp Gln Pro Thr Leu Gly Val Ala Ser Leu  
                     195                    200                    205  
 Glu Val Ala Val Leu Asp Ala Asn Arg Pro Arg Arg Ala Phe Arg Arg  
                     210                    215                    220  
 Ile Thr Gly Ser Ala Leu Gln Ala Leu Leu Val Asp Gln Glu Ser Pro  
 225                    230                    235                    240  
 Gln Ser Asp Gly Glu Ser Ser Gly  
                     245

<210> 61  
 <211> 1560  
 <212> DNA  
 <213> Mycobacterium tuberculosis

<400> 61  
 gagtcattgc ctggtcggcg tcattccgta ctagtcggtt gtcggacttg acctactggg 60  
 tcaggccgac gagcactcga ccattagggg agggggccgtg acccactatg acgtcgtcgt 120  
 tctcggagcc ggtcccggcg ggtatgtcgc ggcgattcgc gccgcacagc tcggcctgag 180  
 cactgcaatc gtcgaacca agtactgggg cggagtatgc ctcaatgtcg gctgtatccc 240  
 atccaaggcg ctgttgcgca acgccgaact ggtccacatc ttcaccaagg acgccaaagc 300  
 atttggcatc agcggcgagg tgaccttcga ctacggcatc gcctatgacc gcagccgaaa 360  
 ggtagccgag ggcagggtgg ccggtgtgca cttcctgatg aagaagaaca agatcaccga 420  
 gatccacggg tacggcacat ttgccgacgc caacacgttg ttggttgatc tcaacgacgg 480  
 cggtacagaa tcggtcacgt tcgacaacgc catcatcgcg accggcagta gcacccggct 540

gggtccccgc acctcactgt cggccaacgt agtcacctac gaggaacaga tcctgtccccg 600  
 agagctgccg aaatcgatca ttattgccgg agctggtgcc attggcatgg agttcggcta 660  
 cgtgctgaag aactacggcg ttgacgtgac catcgtggaa ttccttccgc gggcgctgcc 720  
 caacgaggac gccgatgtgt ccaaggagat cgagaagcag ttcaaaaagc tgggtgtcac 780  
 gatcctgacc gccacgaagg tcgagtccat cgccgatggc gggtcgcagg tcaccgtgac 840  
 cgtcaccaag gacggcggtg cgcaagagct taaggcggaa aagggtgttc aggccatcgg 900  
 atttgcgccc aacgtcgaag ggtacgggct ggacaaggca ggcgtcgcgc tgaccgaccg 960  
 caaggctatc ggtgtcgacg actacatgcg taccaacgtg ggccacatct acgctatcgg 1020  
 cgatgtcaat ggattactgc agctggcgca cgtcgccgag gcacaaggcg tggtagccgc 1080  
 cgaaaccatt gccggtgcag agactttgac gctgggcgac catcggtatg tgccgcgcgc 1140  
 gacgttctgt cagccaaacg ttgccagctt cgggctcacc gagcagcaag cccgcaacga 1200  
 aggttacgac gtggtggtgg ccaagttccc gttcacggcc aacgccaagg cgcacggcgt 1260  
 gggtgacccc agtgggttcg tcaagctggt ggccgacgcc aagcacggcg agctactggg 1320  
 tgggcacctg gtcggccacg acgtggccga gctgctgccg gagctcacgc tggcgcagag 1380  
 gtgggacctg accgccagcg agctggctcg caacgtccac acccaccaa cgatgtctga 1440  
 ggcgctgcag gagtgcttcc acggcctggt tggccacatg atcaatttct gagcgggtca 1500  
 tgacgaggcg cgcgagcact gacaccccc agatcatcat gggtgccatc ggtggtgtgg 1560

<210> 62  
 <211> 464  
 <212> PRT  
 <213> Mycobacterium tuberculosis

<400> 62

Met	Thr	His	Tyr	Asp	Val	Val	Val	Leu	Gly	Ala	Gly	Pro	Gly	Gly	Tyr
1				5				10						15	
Val	Ala	Ala	Ile	Arg	Ala	Ala	Gln	Leu	Gly	Leu	Ser	Thr	Ala	Ile	Val
			20				25						30		
Glu	Pro	Lys	Tyr	Trp	Gly	Gly	Val	Cys	Leu	Asn	Val	Gly	Cys	Ile	Pro
		35					40					45			
Ser	Lys	Ala	Leu	Leu	Arg	Asn	Ala	Glu	Leu	Val	His	Ile	Phe	Thr	Lys
	50					55					60				
Asp	Ala	Lys	Ala	Phe	Gly	Ile	Ser	Gly	Glu	Val	Thr	Phe	Asp	Tyr	Gly
65					70					75				80	

Ile	Ala	Tyr	Asp	Arg	Ser	Arg	Lys	Val	Ala	Glu	Gly	Arg	Val	Ala	Gly	85	90	95
Val	His	Phe	Leu	Met	Lys	Lys	Asn	Lys	Ile	Thr	Glu	Ile	His	Gly	Tyr	100	105	110
Gly	Thr	Phe	Ala	Asp	Ala	Asn	Thr	Leu	Leu	Val	Asp	Leu	Asn	Asp	Gly	115	120	125
Gly	Thr	Glu	Ser	Val	Thr	Phe	Asp	Asn	Ala	Ile	Ile	Ala	Thr	Gly	Ser	130	135	140
Ser	Thr	Arg	Leu	Val	Pro	Gly	Thr	Ser	Leu	Ser	Ala	Asn	Val	Val	Thr	145	150	155
Tyr	Glu	Glu	Gln	Ile	Leu	Ser	Arg	Glu	Leu	Pro	Lys	Ser	Ile	Ile	Ile	165	170	175
Ala	Gly	Ala	Gly	Ala	Ile	Gly	Met	Glu	Phe	Gly	Tyr	Val	Leu	Lys	Asn	180	185	190
Tyr	Gly	Val	Asp	Val	Thr	Ile	Val	Glu	Phe	Leu	Pro	Arg	Ala	Leu	Pro	195	200	205
Asn	Glu	Asp	Ala	Asp	Val	Ser	Lys	Glu	Ile	Glu	Lys	Gln	Phe	Lys	Lys	210	215	220
Leu	Gly	Val	Thr	Ile	Leu	Thr	Ala	Thr	Lys	Val	Glu	Ser	Ile	Ala	Asp	225	230	235
Gly	Gly	Ser	Gln	Val	Thr	Val	Thr	Val	Thr	Lys	Asp	Gly	Val	Ala	Gln	245	250	255
Glu	Leu	Lys	Ala	Glu	Lys	Val	Leu	Gln	Ala	Ile	Gly	Phe	Ala	Pro	Asn	260	265	270
Val	Glu	Gly	Tyr	Gly	Leu	Asp	Lys	Ala	Gly	Val	Ala	Leu	Thr	Asp	Arg	275	280	285
Lys	Ala	Ile	Gly	Val	Asp	Asp	Tyr	Met	Arg	Thr	Asn	Val	Gly	His	Ile	290	295	300
Tyr	Ala	Ile	Gly	Asp	Val	Asn	Gly	Leu	Leu	Gln	Leu	Ala	His	Val	Ala	305	310	315
Glu	Ala	Gln	Gly	Val	Val	Ala	Ala	Glu	Thr	Ile	Ala	Gly	Ala	Glu	Thr	325	330	335
Leu	Thr	Leu	Gly	Asp	His	Arg	Met	Leu	Pro	Arg	Ala	Thr	Phe	Cys	Gln	340	345	350
Pro	Asn	Val	Ala	Ser	Phe	Gly	Leu	Thr	Glu	Gln	Gln	Ala	Arg	Asn	Glu	355	360	365
Gly	Tyr	Asp	Val	Val	Val	Ala	Lys	Phe	Pro	Phe	Thr	Ala	Asn	Ala	Lys	370	375	380

Ala His Gly Val Gly Asp Pro Ser Gly Phe Val Lys Leu Val Ala Asp  
 385 390 395 400

Ala Lys His Gly Glu Leu Leu Gly Gly His Leu Val Gly His Asp Val  
 405 410 415

Ala Glu Leu Leu Pro Glu Leu Thr Leu Ala Gln Arg Trp Asp Leu Thr  
 420 425 430

Ala Ser Glu Leu Ala Arg Asn Val His Thr His Pro Thr Met Ser Glu  
 435 440 445

Ala Leu Gln Glu Cys Phe His Gly Leu Val Gly His Met Ile Asn Phe  
 450 455 460

<210> 63  
 <211> 550  
 <212> DNA  
 <213> Mycobacterium tuberculosis

<400> 63  
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 gtagtcaccc agtaccac accaggaagg accgcccac atggcaáagc tctccaccga 120  
 cgaactgctg gacgcgttca aggaaatgac cctgttgag ctctccgact tcgtcaagaa 180  
 gttcgaggag accttcgagg tcaccgccgc cgctccagtc gccgtcgccg ccgccgggtgc 240  
 cgccccggcc ggtgccgccc tgcaggctgc cgaggagcag tccgagttcg acgtgatcct 300  
 tgaggccgcc ggcgacaaga agatcggcgt catcaagggtg gtccgggaga tcgtttccgg 360  
 cctgggcctc aaggaggcca aggacctggt cgacggcgcg cccaagccgc tgctggagaa 420  
 ggtcgccaag gaggccgccc acgaggccaa ggccaagctg gaggccgccc gcgccaccgt 480  
 caccgtcaag tagctctgcc cagcgtgttc ttttgcgtct gtcggccccg tagcgaacac 540  
 tgcgccgct 550

<210> 64  
 <211> 130  
 <212> PRT  
 <213> Mycobacterium tuberculosis

<400> 64

Met Ala Lys Leu Ser Thr Asp Glu Leu Leu Asp Ala Phe Lys Glu Met  
 1 5 10 15

Thr Leu Leu Glu Leu Ser Asp Phe Val Lys Lys Phe Glu Glu Thr Phe  
 20 25 30

Glu Val Thr Ala Ala Ala Pro Val Ala Val Ala Ala Ala Gly Ala Ala



35                      40                      45  
 Pro Ala Gly Ala Ala Val Glu Ala Ala Glu Glu Gln Ser Glu Phe Asp  
     50                      55                      60  
 Val Ile Leu Glu Ala Ala Gly Asp Lys Lys Ile Gly Val Ile Lys Val  
     65                      70                      75                      80  
 Val Arg Glu Ile Val Ser Gly Leu Gly Leu Lys Glu Ala Lys Asp Leu  
                     85                      90                      95  
 Val Asp Gly Ala Pro Lys Pro Leu Leu Glu Lys Val Ala Lys Glu Ala  
                     100                      105                      110  
 Ala Asp Glu Ala Lys Ala Lys Leu Glu Ala Ala Gly Ala Thr Val Thr  
                     115                      120                      125  
 Val Lys  
     130

<210> 65  
 <211> 900  
 <212> DNA  
 <213> Mycobacterium tuberculosis

<400> 65  
 tgaacgccat cgggtccaac gaacgcagcg ctacctgatc accaccgggt ctgttagggc 60  
 tcttccccag gtcgtacagt cgggccatgg ccattgaggt ttcggtggtg cgggttttca 120  
 ccgattcaga cgggaatttc ggtaatccgc tgggggtgat caacgccagc aaggtcgaac 180  
 accgcgacag gcagcagctg gcagcccaat cgggctacag cgaaaccata ttcgtcgatc 240  
 ttcccagccc cggctcaacc accgcacacg ccaccatcca tactccccgc accgaaattc 300  
 cgttcgccgg acacccgacc gtgggagcgt cctggtggct gcgcgagagg gggacgccaa 360  
 ttaacacgct gcaggtgccg gccggcatcg tccaggtgag ctaccacggt gatctcaccg 420  
 ccatcagcgc ccgctcggaa tgggcacccg agttcgccat ccacgacctg gattcacttg 480  
 atgcgcttgc cgccgccgac cccgccgact ttccggacga catcgcgcac tacctctgga 540  
 cctggaccga ccgctccgct ggctcgtcgc gcgcccgcat gtttgccgcc aacttgggcg 600  
 tcaccgaaga cgaagcgacc ggtgccgagg ccatccggat taccgattac ctcagccgtg 660  
 acctcaccat caccagggc aaaggatcgt tgatccacac cacctggagt cccgagggct 720  
 ggggttcgggt agccggccga gttgtcagcg acggtgtggc acaactcgac tgacgtagag 780  
 ctcagcgctg ccgatgcaac acggcggcaa ggtgatcctg caggggttgc ccgaccgcgc 840  
 gcatctgcaa cgagtacgaa agctcgtcgc cgtcgatgcg gtaggaacgg tcaagggcgg 900

<210> 66  
<211> 228  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 66

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Met Ala Ile Glu Val Ser Val Leu Arg Val Phe Thr Asp Ser Asp Gly
1          5          10          15
Asn Phe Gly Asn Pro Leu Gly Val Ile Asn Ala Ser Lys Val Glu His
20          25          30
Arg Asp Arg Gln Gln Leu Ala Ala Gln Ser Gly Tyr Ser Glu Thr Ile
35          40          45
Phe Val Asp Leu Pro Ser Pro Gly Ser Thr Thr Ala His Ala Thr Ile
50          55          60
His Thr Pro Arg Thr Glu Ile Pro Phe Ala Gly His Pro Thr Val Gly
65          70          75          80
Ala Ser Trp Trp Leu Arg Glu Arg Gly Thr Pro Ile Asn Thr Leu Gln
85          90          95
Val Pro Ala Gly Ile Val Gln Val Ser Tyr His Gly Asp Leu Thr Ala
100         105         110
Ile Ser Ala Arg Ser Glu Trp Ala Pro Glu Phe Ala Ile His Asp Leu
115         120         125
Asp Ser Leu Asp Ala Leu Ala Ala Ala Asp Pro Ala Asp Phe Pro Asp
130         135         140
Asp Ile Ala His Tyr Leu Trp Thr Trp Thr Asp Arg Ser Ala Gly Ser
145         150         155         160
Leu Arg Ala Arg Met Phe Ala Ala Asn Leu Gly Val Thr Glu Asp Glu
165         170         175
Ala Thr Gly Ala Ala Ala Ile Arg Ile Thr Asp Tyr Leu Ser Arg Asp
180         185         190
Leu Thr Ile Thr Gln Gly Lys Gly Ser Leu Ile His Thr Thr Trp Ser
195         200         205
Pro Glu Gly Trp Val Arg Val Ala Gly Arg Val Val Ser Asp Gly Val
210         215         220
Ala Gln Leu Asp
225
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<210> 67  
<211> 500  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 67  
 gtttgtggtg tccgtggtct ggggggcgcc aactgggatt cggttggggg ggggtgcaggt 60  
 ccggcgatgg gcatcggagg tgtgggtggt ttgggtgggg ccggttcggg tccggcgatg 120  
 ggcattggggg gtgtgggtgg tttgggtggg gccgggttcgg gtccggcgat gggcatgggg 180  
 ggtgtgggtg gtttagatgc ggccgggtcc gccgagggcg gctctcctgc ggcgatcggc 240  
 atcggagttg gcggaggcgg aggtgggggt ggggggtggcg gcggcggggc cgacacgaac 300  
 cgctccgaca ggtcgtcggg cgtcgggggc ggagtctggc cgttgggctt cggtaggttt 360  
 gccgatgcgg gcgccggcgg aaacgaagca ctggggtcga agaacggctg cgctgccata 420  
 tcgtccggag cttccatacc ttcgtgcggc cggaagagct tgctgtagtc ggccgccatg 480  
 acaacctctc agagtgcgct 500

<210> 68  
 <211> 139  
 <212> PRT  
 <213> Mycobacterium tuberculosis

<400> 68  
 Met Gly Ala Gly Pro Ala Met Gly Ile Gly Gly Val Gly Gly Leu Gly  
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 Gly Ala Gly Ser Gly Pro Ala Met Gly Met Gly Gly Val Gly Gly Leu  
 20 25 30  
 Gly Gly Ala Gly Ser Gly Pro Ala Met Gly Met Gly Gly Val Gly Gly  
 35 40 45  
 Leu Asp Ala Ala Gly Ser Gly Glu Gly Gly Ser Pro Ala Ala Ile Gly  
 50 55 60  
 Ile Gly Val Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly  
 65 70 75 80  
 Ala Asp Thr Asn Arg Ser Asp Arg Ser Ser Asp Val Gly Gly Gly Val  
 85 90 95  
 Trp Pro Leu Gly Phe Gly Arg Phe Ala Asp Ala Gly Ala Gly Gly Asn  
 100 105 110  
 Glu Ala Leu Gly Ser Lys Asn Gly Cys Ala Ala Ile Ser Ser Gly Ala  
 115 120 125  
 Ser Ile Pro Ser Cys Gly Arg Lys Ser Leu Ser  
 130 135

<210> 69  
 <211> 2050  
 <212> DNA

<213> Mycobacterium tuberculosis

<400> 69

agcgcaactct gagaggttgt catggcggcc gactacgaca agctcttccg gccgcacgaa	60
ggtatggaag ctccggacga tatggcagcg cagccgttct tcgacccag tgcttcgttt	120
ccgccggcgc ccgcacgcgc aaacctaccg aagcccaacg gccagactcc gccccgcgc	180
tccgacgacc tgtcggagcg gttcgtgtcg gccccgcgc cgccaccccc acccccacct	240
ccgcctccgc caactccgat gccgatcgcc gcaggagagc cgccctcgcc ggaaccggcc	300
gcatctaaac caccacacc ccccatgccc atcgccggac ccgaaccggc cccacccaaa	360
ccaccacac ccccatgccc catcgccgga ccgaaccggc cccacccaa accaccaca	420
cctccgatgc ccatcgccgc acctgcaccc accccaaccg aatcccagtt ggcgcccccc	480
agaccaccga caccacaaac gccaacggga gcgcgcgagc aaccggaatc accggcgccc	540
cacgtaccct cgcacgggcc acatcaaccc cggcgccacc caccagcacc gccctgggca	600
aagatgccaa tcggcgaaac cccgcccgtt ccgtccagac cgtctgcgtc cccggccgaa	660
ccaccgacc ggccctgcccc ccaacactcc cgacgtgcgc gccgggggtca ccgctatcgc	720
acagacaccg aacgaaacgt cgggaaggta gcaactggtc catccatcca ggcgcggtg	780
cgggcagagg aagcatccgc cgcgcagctc gccccggaa cggagccctc gccagcgccg	840
ttggggccaa cgagatcgta tctggtccg cccaccgcgc ccgcgccgac agaacctccc	900
cccagccctt cgccgcagcg caactccggt cggcgtgccc agcgacgcgt ccacccgat	960
ttagccgccc aacatgccgc ggcgcaacct gattcaatta cggccgcaac cactggcggt	1020
cgtcgccgca agcgtgcagc gccggatctc gacgcgacac agaaatcctt aaggccggcg	1080
gccaaagggc cgaaggtgaa gaaggtgaag cccagaaaac cgaaggccac gaagccgccc	1140
aaagtgtgt cgcagcgcg ctggcgacat tgggtgcatg cgttgacgcg aatcaacctg	1200
ggcctgtcac ccgacgagaa gtacgagctg gacctgcag ctcgagtccg ccgcaatccc	1260
cgcggggtcgt atcagatcgc cgtcgtcggc ctcaaagggtg gggctggcaa aaccacgtg	1320
acagcagcgt tggggctcgc gttggctcag gtgcggggcc accggatcct ggctctagac	1380
gcggatccag gcgccgaaa cctcgccgat cgggtagggc gacaatcggg cgcgaccatc	1440
gctgatgtgc ttgcagaaaa agagctgtcg cactacaacg acatccgcgc acacactagc	1500
gtcaatgcgg tcaatctgga agtgcgtgcc gcaccggaat acagctcggc gcagcgcgcg	1560
ctcagcgacg ccgactggca tttcatcgcc gatcctgcgt cgaggtttta caacctcgtc	1620

ttggctgatt gtggggccgg cttcttcgac ccgctgaccc gcggcgtgct gtccacggtg 1680  
 tccggtgtcg tggctcgtggc aagtgtctca atcgacggcg cacaacaggc gtcggtcgcg 1740  
 ttggactggt tgcgcaacaa cggttaccaa gatttggcga gccgcgcacg cgtgggtcatc 1800  
 aatcacatca tgccgggaga acccaatgtc gcagttaaag acctggtgcg gcatttcgaa 1860  
 cagcaagttc aaccgcggcg ggctcgtggc atgccgtggg acaggcacat tgcggccgga 1920  
 accgagattt cactcgactt gctcgaccct atctacaagc gcaaggctct cgaattggcc 1980  
 gcagcgctat ccgacgattt cgagaggggt ggacgtcggt gagcgcacct gctgttgctg 2040  
 ctggtcctac 2050

<210> 70  
 <211> 666  
 <212> PRT  
 <213> Mycobacterium tuberculosis

<400> 70

Met	Ala	Ala	Asp	Tyr	Asp	Lys	Leu	Phe	Arg	Pro	His	Glu	Gly	Met	Glu	1	5	10	15
Ala	Pro	Asp	Asp	Met	Ala	Ala	Gln	Pro	Phe	Phe	Asp	Pro	Ser	Ala	Ser	20	25	30	
Phe	Pro	Pro	Ala	Pro	Ala	Ser	Ala	Asn	Leu	Pro	Lys	Pro	Asn	Gly	Gln	35	40	45	
Thr	Pro	Pro	Pro	Thr	Ser	Asp	Asp	Leu	Ser	Glu	Arg	Phe	Val	Ser	Ala	50	55	60	
Pro	Pro	Pro	Pro	Pro	Pro	Pro	Pro	Pro	Pro	Pro	Pro	Pro	Thr	Pro	Met	65	70	75	80
Pro	Ile	Ala	Ala	Gly	Glu	Pro	Pro	Ser	Pro	Glu	Pro	Ala	Ala	Ser	Lys	85	90	95	
Pro	Pro	Thr	Pro	Pro	Met	Pro	Ile	Ala	Gly	Pro	Glu	Pro	Ala	Pro	Pro	100	105	110	
Lys	Pro	Pro	Thr	Pro	Pro	Met	Pro	Ile	Ala	Gly	Pro	Glu	Pro	Ala	Pro	115	120	125	
Pro	Lys	Pro	Pro	Thr	Pro	Pro	Met	Pro	Ile	Ala	Gly	Pro	Ala	Pro	Thr	130	135	140	
Pro	Thr	Glu	Ser	Gln	Leu	Ala	Pro	Pro	Arg	Pro	Pro	Thr	Pro	Gln	Thr	145	150	155	160
Pro	Thr	Gly	Ala	Pro	Gln	Gln	Pro	Glu	Ser	Pro	Ala	Pro	His	Val	Pro	165	170	175	

Ser	His	Gly	Pro	His	Gln	Pro	Arg	Arg	Thr	Ala	Pro	Ala	Pro	Pro	Trp	180	185	190
Ala	Lys	Met	Pro	Ile	Gly	Glu	Pro	Pro	Pro	Ala	Pro	Ser	Arg	Pro	Ser	195	200	205
Ala	Ser	Pro	Ala	Glu	Pro	Pro	Thr	Arg	Pro	Ala	Pro	Gln	His	Ser	Arg	210	215	220
Arg	Ala	Arg	Arg	Gly	His	Arg	Tyr	Arg	Thr	Asp	Thr	Glu	Arg	Asn	Val	225	230	235
Gly	Lys	Val	Ala	Thr	Gly	Pro	Ser	Ile	Gln	Ala	Arg	Leu	Arg	Ala	Glu	245	250	255
Glu	Ala	Ser	Gly	Ala	Gln	Leu	Ala	Pro	Gly	Thr	Glu	Pro	Ser	Pro	Ala	260	265	270
Pro	Leu	Gly	Gln	Pro	Arg	Ser	Tyr	Leu	Ala	Pro	Pro	Thr	Arg	Pro	Ala	275	280	285
Pro	Thr	Glu	Pro	Pro	Pro	Ser	Pro	Ser	Pro	Gln	Arg	Asn	Ser	Gly	Arg	290	295	300
Arg	Ala	Glu	Arg	Arg	Val	His	Pro	Asp	Leu	Ala	Ala	Gln	His	Ala	Ala	305	310	315
Ala	Gln	Pro	Asp	Ser	Ile	Thr	Ala	Ala	Thr	Thr	Gly	Gly	Arg	Arg	Arg	325	330	335
Lys	Arg	Ala	Ala	Pro	Asp	Leu	Asp	Ala	Thr	Gln	Lys	Ser	Leu	Arg	Pro	340	345	350
Ala	Ala	Lys	Gly	Pro	Lys	Val	Lys	Lys	Val	Lys	Pro	Gln	Lys	Pro	Lys	355	360	365
Ala	Thr	Lys	Pro	Pro	Lys	Val	Val	Ser	Gln	Arg	Gly	Trp	Arg	His	Trp	370	375	380
Val	His	Ala	Leu	Thr	Arg	Ile	Asn	Leu	Gly	Leu	Ser	Pro	Asp	Glu	Lys	385	390	395
Tyr	Glu	Leu	Asp	Leu	His	Ala	Arg	Val	Arg	Arg	Asn	Pro	Arg	Gly	Ser	405	410	415
Tyr	Gln	Ile	Ala	Val	Val	Gly	Leu	Lys	Gly	Gly	Ala	Gly	Lys	Thr	Thr	420	425	430
Leu	Thr	Ala	Ala	Leu	Gly	Ser	Thr	Leu	Ala	Gln	Val	Arg	Ala	Asp	Arg	435	440	445
Ile	Leu	Ala	Leu	Asp	Ala	Asp	Pro	Gly	Ala	Gly	Asn	Leu	Ala	Asp	Arg	450	455	460
Val	Gly	Arg	Gln	Ser	Gly	Ala	Thr	Ile	Ala	Asp	Val	Leu	Ala	Glu	Lys	465	470	475

Glu Leu Ser His Tyr Asn Asp Ile Arg Ala His Thr Ser Val Asn Ala  
                             485                            490                            495  
 Val Asn Leu Glu Val Leu Pro Ala Pro Glu Tyr Ser Ser Ala Gln Arg  
                             500                            505                            510  
 Ala Leu Ser Asp Ala Asp Trp His Phe Ile Ala Asp Pro Ala Ser Arg  
                             515                            520                            525  
 Phe Tyr Asn Leu Val Leu Ala Asp Cys Gly Ala Gly Phe Phe Asp Pro  
                             530                            535                            540  
 Leu Thr Arg Gly Val Leu Ser Thr Val Ser Gly Val Val Val Val Ala  
 545                            550                            555                            560  
 Ser Val Ser Ile Asp Gly Ala Gln Gln Ala Ser Val Ala Leu Asp Trp  
                             565                            570                            575  
 Leu Arg Asn Asn Gly Tyr Gln Asp Leu Ala Ser Arg Ala Cys Val Val  
                             580                            585                            590  
 Ile Asn His Ile Met Pro Gly Glu Pro Asn Val Ala Val Lys Asp Leu  
                             595                            600                            605  
 Val Arg His Phe Glu Gln Gln Val Gln Pro Gly Arg Val Val Val Met  
                             610                            615                            620  
 Pro Trp Asp Arg His Ile Ala Ala Gly Thr Glu Ile Ser Leu Asp Leu  
 625                            630                            635                            640  
 Leu Asp Pro Ile Tyr Lys Arg Lys Val Leu Glu Leu Ala Ala Ala Leu  
                             645                            650                            655  
 Ser Asp Asp Phe Glu Arg Ala Gly Arg Arg  
                             660                            665

<210> 71  
 <211> 1890  
 <212> DNA  
 <213> Mycobacterium tuberculosis

<400> 71  
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 ctggaccagc tcggc actgc tgaatcgcgt gcgtacaaga tgtgg ctgcc gccgttgacc 180  
 aatccgggtcc cgctcaacga gctcatcgcc cgtgatcggc gacaaccct gcgatttgcc 240  
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 ggggccggcg gcaacatcgg tattgggggc gcacctcaaa ccgggaagtc gacgctactg 360  
 cagacgatgg tgatgtcggc cgccgccaca cactcaccgc gcaacgttca gttctattgc 420  
 atcgacctag gtggcgggcg gctgatctat ctcgaaaacc ttccacacgt cgggtggggta 480

gccaatcggg	ccgagcccga	caaggtcaac	cgggtgggtcg	cagagatgca	agccgtcatg	540
cggcaacggg	aaaccacctt	caaggaacac	cgagtgggct	cgatcgggat	gtaccggcag	600
ctgcgtgacg	atccaagtca	acccgttgcg	tccgatccat	acggcgacgt	ctttctgac	660
atcgacggat	ggcccgggtt	tgtcggcgag	ttccccgacc	ttgaggggca	ggttcaagat	720
ctggccgccc	aggggctggg	gttcggcgct	cacgtcatca	tctccacgcc	acgtggaca	780
gagctgaagt	cgcgtgttcg	cgactacctc	ggcaccaaga	tcgagttccg	gcttggtgac	840
gtcaatgaaa	cccagatcga	ccggattacc	cgcgagatcc	cggcgaatcg	tccgggtcgg	900
gcagtgtcga	tggaaaagca	ccatctgatg	atcggcgtgc	ccagggttcga	cggcgtgcac	960
agcgccgata	acctgggtga	ggcgatcacc	gcgggggtga	cgcagatcgc	ttcccagcac	1020
accgaacagg	cacctccggg	gcgggtcctg	ccggagcgta	tccacctgca	cgaactcgac	1080
ccgaaccgcg	cgggaccaga	gtccgactac	cgcactcgct	gggagattcc	gatcggcttg	1140
cgcgagacgg	acctgacgcc	ggctcactgc	cacatgcaca	cgaaccgcga	cctactgatc	1200
ttcgggtcgg	ccaaatcggg	caagacgacc	attgcccacg	cgatcgcgcg	cgccatttgt	1260
gcccgaaaaca	gtccccagca	gggtcgggttc	atgctcgcgg	actaccgctc	gggcctgctg	1320
gacgcggtgc	cggacaccca	tctgctgggc	gccggcgcgga	tcaaccgcaa	cagcgcgtcg	1380
ctagacgagg	ccgctcaagc	actggcggtc	aacctgaaga	agcggttgcc	gccgaccgac	1440
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gtcgacgatt	ggcacatgat	cgtgggtgcc	gccgggggga	tgccgccgat	ggcaccgctg	1560
gccccgttat	tgccggcggc	ggcagatata	gggttgacac	tcattgtcac	ctgtcagatg	1620
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ccgacaatgt	tcctttcggg	cgagaagcag	gaattcccat	ccagtgagtt	caaggtcaag	1740
cggcgccccc	ctggccaggc	atttctcgtc	tcgccagacg	gcaaagaggt	catccaggcc	1800
ccctacatcg	agcctccaga	agaagtgttc	gcagcacccc	caagcgccgg	ttaagattat	1860
ttcattgccg	gtgtagcagg	acccgagctc				1890

<210> 72  
 <211> 591  
 <212> PRT  
 <213> *Mycobacterium tuberculosis*  
 <400> 72



Met	Thr	Ala	Glu	Pro	Glu	Val	Arg	Thr	Leu	Arg	Glu	Val	Val	Leu	Asp	1	5	10	15
Gln	Leu	Gly	Thr	Ala	Glu	Ser	Arg	Ala	Tyr	Lys	Met	Trp	Leu	Pro	Pro	20	25	30	
Leu	Thr	Asn	Pro	Val	Pro	Leu	Asn	Glu	Leu	Ile	Ala	Arg	Asp	Arg	Arg	35	40	45	
Gln	Pro	Leu	Arg	Phe	Ala	Leu	Gly	Ile	Met	Asp	Glu	Pro	Arg	Arg	His	50	55	60	
Leu	Gln	Asp	Val	Trp	Gly	Val	Asp	Val	Ser	Gly	Ala	Gly	Gly	Asn	Ile	65	70	75	80
Gly	Ile	Gly	Gly	Ala	Pro	Gln	Thr	Gly	Lys	Ser	Thr	Leu	Leu	Gln	Thr	85	90	95	
Met	Val	Met	Ser	Ala	Ala	Ala	Thr	His	Ser	Pro	Arg	Asn	Val	Gln	Phe	100	105	110	
Tyr	Cys	Ile	Asp	Leu	Gly	Gly	Gly	Gly	Leu	Ile	Tyr	Leu	Glu	Asn	Leu	115	120	125	
Pro	His	Val	Gly	Gly	Val	Ala	Asn	Arg	Ser	Glu	Pro	Asp	Lys	Val	Asn	130	135	140	
Arg	Val	Val	Ala	Glu	Met	Gln	Ala	Val	Met	Arg	Gln	Arg	Glu	Thr	Thr	145	150	155	160
Phe	Lys	Glu	His	Arg	Val	Gly	Ser	Ile	Gly	Met	Tyr	Arg	Gln	Leu	Arg	165	170	175	
Asp	Asp	Pro	Ser	Gln	Pro	Val	Ala	Ser	Asp	Pro	Tyr	Gly	Asp	Val	Phe	180	185	190	
Leu	Ile	Ile	Asp	Gly	Trp	Pro	Gly	Phe	Val	Gly	Glu	Phe	Pro	Asp	Leu	195	200	205	
Glu	Gly	Gln	Val	Gln	Asp	Leu	Ala	Ala	Gln	Gly	Leu	Gly	Phe	Gly	Val	210	215	220	
His	Val	Ile	Ile	Ser	Thr	Pro	Arg	Trp	Thr	Glu	Leu	Lys	Ser	Arg	Val	225	230	235	240
Arg	Asp	Tyr	Leu	Gly	Thr	Lys	Ile	Glu	Phe	Arg	Leu	Gly	Asp	Val	Asn	245	250	255	
Glu	Thr	Gln	Ile	Asp	Arg	Ile	Thr	Arg	Glu	Ile	Pro	Ala	Asn	Arg	Pro	260	265	270	
Gly	Arg	Ala	Val	Ser	Met	Glu	Lys	His	His	Leu	Met	Ile	Gly	Val	Pro	275	280	285	
Arg	Phe	Asp	Gly	Val	His	Ser	Ala	Asp	Asn	Leu	Val	Glu	Ala	Ile	Thr	290	295	300	

Ala Gly Val Thr Gln Ile Ala Ser Gln His Thr Glu Gln Ala Pro Pro  
 305 310 315 320  
 Val Arg Val Leu Pro Glu Arg Ile His Leu His Glu Leu Asp Pro Asn  
 325 330 335  
 Pro Pro Gly Pro Glu Ser Asp Tyr Arg Thr Arg Trp Glu Ile Pro Ile  
 340 345 350  
 Gly Leu Arg Glu Thr Asp Leu Thr Pro Ala His Cys His Met His Thr  
 355 360 365  
 Asn Pro His Leu Leu Ile Phe Gly Ala Ala Lys Ser Gly Lys Thr Thr  
 370 375 380  
 Ile Ala His Ala Ile Ala Arg Ala Ile Cys Ala Arg Asn Ser Pro Gln  
 385 390 395 400  
 Gln Val Arg Phe Met Leu Ala Asp Tyr Arg Ser Gly Leu Leu Asp Ala  
 405 410 415  
 Val Pro Asp Thr His Leu Leu Gly Ala Gly Ala Ile Asn Arg Asn Ser  
 420 425 430  
 Ala Ser Leu Asp Glu Ala Ala Gln Ala Leu Ala Val Asn Leu Lys Lys  
 435 440 445  
 Arg Leu Pro Pro Thr Asp Leu Thr Thr Ala Gln Leu Arg Ser Arg Ser  
 450 455 460  
 Trp Trp Ser Gly Phe Asp Val Val Leu Leu Val Asp Asp Trp His Met  
 465 470 475 480  
 Ile Val Gly Ala Ala Gly Gly Met Pro Pro Met Ala Pro Leu Ala Pro  
 485 490 495  
 Leu Leu Pro Ala Ala Ala Asp Ile Gly Leu His Ile Ile Val Thr Cys  
 500 505 510  
 Gln Met Ser Gln Ala Tyr Lys Ala Thr Met Asp Lys Phe Val Gly Ala  
 515 520 525  
 Ala Phe Gly Ser Gly Ala Pro Thr Met Phe Leu Ser Gly Glu Lys Gln  
 530 535 540  
 Glu Phe Pro Ser Ser Glu Phe Lys Val Lys Arg Arg Pro Pro Gly Gln  
 545 550 555 560  
 Ala Phe Leu Val Ser Pro Asp Gly Lys Glu Val Ile Gln Ala Pro Tyr  
 565 570 575  
 Ile Glu Pro Pro Glu Glu Val Phe Ala Ala Pro Pro Ser Ala Gly  
 580 585 590

<210> 73  
 <211> 15  
 <212> PRT

<213> Mycobacterium tuberculosis

<400> 73

Asp Pro Val Asp Asp Ala Phe Ile Ala Lys Leu Asn Thr Ala Gly  
1 5 10 15

<210> 74

<211> 14

<212> PRT

<213> Mycobacterium tuberculosis

<220>

<221> MISC\_FEATURE

<222> (14)..(14)

<223> "Xaa" is unknown

<400> 74

Asp Pro Val Asp Ala Ile Ile Asn Leu Asp Asn Tyr Gly Xaa  
1 5 10

<210> 75

<211> 15

<212> PRT

<213> Mycobacterium tuberculosis

<220>

<221> MISC\_FEATURE

<222> (5)..(5)

<223> "Xaa" is unknown

<400> 75

Ala Glu Met Lys Xaa Phe Lys Asn Ala Ile Val Gln Glu Ile Asp  
1 5 10 15

<210> 76

<211> 14

<212> PRT

<213> Mycobacterium tuberculosis

<220>

<221> variant

<222> (3)..(3)

<223> Ala is Ala or Gln

<220>

<221> variant

<222> (7)..(7)

<223> Thr is Gly or Thr

<220>

<221> MISC\_FEATURE  
<222> (11)..(11)  
<223> "Xaa" is unknown

<400> 76

Val Ile Ala Gly Met Val Thr His Ile His Xaa Val Ala Gly  
1 5 10

<210> 77  
<211> 15  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 77

Thr Asn Ile Val Val Leu Ile Lys Gln Val Pro Asp Thr Trp Ser  
1 5 10 15

<210> 78  
<211> 15  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 78

Ala Ile Glu Val Ser Val Leu Arg Val Phe Thr Asp Ser Asp Gly  
1 5 10 15

<210> 79  
<211> 15  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 79

Ala Lys Leu Ser Thr Asp Glu Leu Leu Asp Ala Phe Lys Glu Met  
1 5 10 15

<210> 80  
<211> 15  
<212> PRT  
<213> Mycobacterium tuberculosis

<220>  
<221> variant  
<222> (4)..(4)  
<223> Asp is Asp or Glu

<400> 80

Asp Pro Ala Asp Ala Pro Asp Val Pro Thr Ala Ala Gln Leu Thr  
1 5 10 15

<210> 81

<211> 50  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 81

Ala Glu Asp Val Arg Ala Glu Ile Val Ala Ser Val Leu Glu Val Val  
1 5 10 15  
Val Asn Glu Gly Asp Gln Ile Asp Lys Gly Asp Val Val Val Leu Leu  
20 25 30  
Glu Ser Met Tyr Met Glu Ile Pro Val Leu Ala Glu Ala Ala Gly Thr  
35 40 45  
Val Ser  
50

<210> 82  
<211> 15  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 82

Thr Thr Ser Pro Asp Pro Tyr Ala Ala Leu Pro Lys Leu Pro Ser  
1 5 10 15

<210> 83  
<211> 15  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 83

Thr Glu Tyr Glu Gly Pro Lys Thr Lys Phe His Ala Leu Met Gln  
1 5 10 15

<210> 84  
<211> 15  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 84

Thr Thr Ile Val Ala Leu Lys Tyr Pro Gly Gly Val Val Met Ala  
1 5 10 15

<210> 85  
<211> 15  
<212> PRT  
<213> Mycobacterium tuberculosis

<220>  
<221> MISC\_FEATURE  
<222> (10)..(10)  
<223> "Xaa" is unknown

<220>  
<221> MISC\_FEATURE  
<222> (15)..(15)  
<223> "Xaa" is unknown

<400> 85

Ser	Phe	Pro	Tyr	Phe	Ile	Ser	Pro	Glu	Xaa	Ala	Met	Arg	Glu	Xaa
1				5				10					15	

<210> 86  
<211> 15  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 86

Thr	His	Tyr	Asp	Val	Val	Val	Leu	Gly	Ala	Gly	Pro	Gly	Gly	Tyr
1				5				10					15	

<210> 87  
<211> 450  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 87  
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cggtttgtgt acgggataca aatacagggg gggaagaagt aggcaaattgg aaaaaatgtc 120  
acatgatccg atcgctgccg acattggcac gcaagtgagc gacaacgctc tgcacggcgt 180  
gacggccggc tgcacggcgc tgacgtcggt gaccgggctg gttcccgcgg gggccgatga 240  
gggtctccgcc caagcggcga cggcgttcac atcggagggc atccaattgc tggcttccaa 300  
tgcacgggcc caagaccagc tccaccgtgc gggcgaagcg gtccaggacg tgcgccgcac 360  
ctattcgcaa atcgacgacg gcgccgccgg cgtcttcgcc taataggccc ccaacacatc 420  
ggagggagtg atcaccatgc tgtggcacgc 450

<210> 88  
<211> 98  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 88

Met	Glu	Lys	Met	Ser	His	Asp	Pro	Ile	Ala	Ala	Asp	Ile	Gly	Thr	Gln
1				5				10					15		

Val Ser Asp Asn Ala Leu His Gly Val Thr Ala Gly Ser Thr Ala Leu

	20		25		30										
Thr	Ser	Val	Thr	Gly	Leu	Val	Pro	Ala	Gly	Ala	Asp	Glu	Val	Ser	Ala
	35						40					45			
Gln	Ala	Ala	Thr	Ala	Phe	Thr	Ser	Glu	Gly	Ile	Gln	Leu	Leu	Ala	Ser
	50					55					60				
Asn	Ala	Ser	Ala	Gln	Asp	Gln	Leu	His	Arg	Ala	Gly	Glu	Ala	Val	Gln
65					70					75					80
Asp	Val	Ala	Arg	Thr	Tyr	Ser	Gln	Ile	Asp	Asp	Gly	Ala	Ala	Gly	Val
				85					90					95	

Phe Ala

<210> 89  
 <211> 460  
 <212> DNA  
 <213> Mycobacterium tuberculosis

<400> 89  
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 ccaggtagcg actccgcgcg cagcaggccc gcgcccgcgc tggggcctga tccaccagcc 120  
 agcggatggt tgcacagcgg actggtgccg agcaggccca tctgcgcggc ttctctgctcg 180  
 gctggggttc cgccgccggg gccgcccacc tggctgaaca acgacgtcac ctgctgcagc 240  
 ggctgggtca gctgctgcat cgggccgctc atctcaccga gttggccgag ggtctgggta 300  
 gccgccggcg gcaactggcc aaccggtgtt gagctgccag gggagggcat tccgaagatc 360  
 gggttcgtcg tgctctggct cgcgccggga tcaaggatcg acgccatcgg ctcgagcttc 420  
 tcgaaaagcg tgttaaccgc ggtctcggcc tggtagacct 460

<210> 90  
 <211> 139  
 <212> PRT  
 <213> Mycobacterium tuberculosis

<400> 90

Met	Arg	Val	Asn	Asp	Pro	Pro	Ala	Pro	Gly	Ser	Asp	Ser	Ala	Arg	Ser
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Arg	Pro	Ala	Pro	Ala	Leu	Gly	Pro	Asp	Pro	Pro	Ala	Ser	Gly	Trp	Phe
		20					25					30			
Asp	Ser	Gly	Leu	Val	Pro	Ser	Arg	Pro	Ile	Cys	Ala	Ala	Ser	Ser	Ser
		35					40				45				
Ala	Gly	Leu	Pro	Pro	Pro	Val	Pro	Pro	Thr	Trp	Leu	Asn	Asn	Asp	Val

50		55		60
Thr Cys Cys Ser Gly Trp Val Ser Cys Cys Ile Gly Pro Leu Ile Ser				
65		70		75
				80
Pro Ser Trp Pro Arg Val Trp Val Ala Ala Gly Gly Asn Trp Pro Thr				
	85		90	
				95
Gly Val Glu Leu Pro Gly Glu Gly Ile Pro Lys Ile Gly Phe Val Val				
	100		105	
				110
Leu Trp Leu Ala Pro Gly Ser Arg Ile Asp Ala Ile Gly Ser Ser Phe				
	115		120	
				125
Ser Lys Ser Val Leu Thr Ala Val Ser Ala Trp				
	130		135	

<210> 91  
 <211> 1200  
 <212> DNA  
 <213> Mycobacterium tuberculosis

<400> 91	
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gcgggatggc agacgctttc ggcggtcttg gacgctcagg ccgtcgagtt gaccgcgcgc	180
ctgaactctc tgggagaagc ctggactgga ggtggcagcg acaaggcgct tgcggctgca	240
acgccgatgg tggctctggct acaaaccgcg tcaacacagg ccaagaccg tgcgatgcag	300
gcgacggcgc aagccgcggc atacaccag gccatggcca cgacgccgtc gctgccggag	360
atcgccgcca accacatcac ccaggccgtc cttacggcca ccaacttctt cggtatcaac	420
acgatccga tcgcgttgac cgagatggat tatttcatcc gtatgtggaa ccaggcagcc	480
ctggcaatgg aggtctacca ggccgagacc gcggttaaca cgcttttcga gaagctcgag	540
ccgatggcgt cgatccttga tcccggcgcg agccagagca cgacgaacct gatcttcgga	600
atgccctccc ctggcagctc aacaccggtt ggccagttgc cgccggcggc taccagacc	660
ctcggccaaac tgggtgagat gagcggcccc atgcagcagc tgaccagcc gctgcagcag	720
gtgacgtcgt tgttcagcca ggtgggcggc accggcggcg gcaaccagc cgacgaggaa	780
gccgcgcaga tgggcctgct cggcaccagt ccgctgtcga accatccgct ggctgggtgga	840
tcaggcccca gcgcgggcgc gggcctgctg cgcgcgaggt cgctacctgg cgcaggtggg	900
tcgttgaccc gcacgccgct gatgtctcag ctgatcgaag agccggttgc cccctcgggtg	960
atgccggcgg ctgctgccgg atcgtcggcg acgggtggcg ccgctccggt ggggtgcggga	1020



gcgatggggcc aggggtgcgca atccggcggc tccaccaggc cgggtctggt cgcgccggca 1080  
 ccgctcgcgc aggagcgtga agaagacgac gaggacgact gggacgaaga ggacgactgg 1140  
 tgagctcccg taatgacaac agacttcccg gccacccggg ccggaagact tgccaacatt 1200

<210> 92  
 <211> 371  
 <212> PRT  
 <213> Mycobacterium tuberculosis

<400> 92

Met	Ile	Thr	Met	Leu	Trp	His	Ala	Met	Pro	Pro	Glu	Leu	Asn	Thr	Ala	1	5	10	15
Arg	Leu	Met	Ala	Gly	Ala	Gly	Pro	Ala	Pro	Met	Leu	Ala	Ala	Ala	Ala	20	25	30	
Gly	Trp	Gln	Thr	Leu	Ser	Ala	Ala	Leu	Asp	Ala	Gln	Ala	Val	Glu	Leu	35	40	45	
Thr	Ala	Arg	Leu	Asn	Ser	Leu	Gly	Glu	Ala	Trp	Thr	Gly	Gly	Gly	Ser	50	55	60	
Asp	Lys	Ala	Leu	Ala	Ala	Ala	Thr	Pro	Met	Val	Val	Trp	Leu	Gln	Thr	65	70	75	80
Ala	Ser	Thr	Gln	Ala	Lys	Thr	Arg	Ala	Met	Gln	Ala	Thr	Ala	Gln	Ala	85	90	95	
Ala	Ala	Tyr	Thr	Gln	Ala	Met	Ala	Thr	Thr	Pro	Ser	Leu	Pro	Glu	Ile	100	105	110	
Ala	Ala	Asn	His	Ile	Thr	Gln	Ala	Val	Leu	Thr	Ala	Thr	Asn	Phe	Phe	115	120	125	
Gly	Ile	Asn	Thr	Ile	Pro	Ile	Ala	Leu	Thr	Glu	Met	Asp	Tyr	Phe	Ile	130	135	140	
Arg	Met	Trp	Asn	Gln	Ala	Ala	Leu	Ala	Met	Glu	Val	Tyr	Gln	Ala	Glu	145	150	155	160
Thr	Ala	Val	Asn	Thr	Leu	Phe	Glu	Lys	Leu	Glu	Pro	Met	Ala	Ser	Ile	165	170	175	
Leu	Asp	Pro	Gly	Ala	Ser	Gln	Ser	Thr	Thr	Asn	Pro	Ile	Phe	Gly	Met	180	185	190	
Pro	Ser	Pro	Gly	Ser	Ser	Thr	Pro	Val	Gly	Gln	Leu	Pro	Pro	Ala	Ala	195	200	205	
Thr	Gln	Thr	Leu	Gly	Gln	Leu	Gly	Glu	Met	Ser	Gly	Pro	Met	Gln	Gln	210	215	220	
Leu	Thr	Gln	Pro	Leu	Gln	Gln	Val	Thr	Ser	Leu	Phe	Ser	Gln	Val	Gly				

225                      230                      235                      240  
 Gly Thr Gly Gly Gly Asn Pro Ala Asp Glu Glu Ala Ala Gln Met Gly  
                                  245                      250                      255  
 Leu Leu Gly Thr Ser Pro Leu Ser Asn His Pro Leu Ala Gly Gly Ser  
                                  260                      265                      270  
 Gly Pro Ser Ala Gly Ala Gly Leu Leu Arg Ala Glu Ser Leu Pro Gly  
                                  275                      280                      285  
 Ala Gly Gly Ser Leu Thr Arg Thr Pro Leu Met Ser Gln Leu Ile Glu  
                                  290                      295                      300  
 Lys Pro Val Ala Pro Ser Val Met Pro Ala Ala Ala Ala Gly Ser Ser  
 305                      310                      315                      320  
 Ala Thr Gly Gly Ala Ala Pro Val Gly Ala Gly Ala Met Gly Gln Gly  
                                  325                      330                      335  
 Ala Gln Ser Gly Gly Ser Thr Arg Pro Gly Leu Val Ala Pro Ala Pro  
                                  340                      345                      350  
 Leu Ala Gln Glu Arg Glu Glu Asp Asp Glu Asp Asp Trp Asp Glu Glu  
                                  355                      360                      365  
 Asp Asp Trp  
 370

<210> 93  
 <211> 1000  
 <212> DNA  
 <213> Mycobacterium tuberculosis

<400> 93  
 gacgcgacac agaaatcctt aaggccggcg gccaaaggggc cgaagggtgaa gaagggtgaag 60  
 cccagaaaac cgaaggccac gaagccgccc aaagtgggtgt cgcagcgcggt ctggcgacat 120  
 tgggtgcatg cgttgacgcg aatcaacctg ggctgtcac cgcagagaaa gtacgagctg 180  
 gacctgcacg ctcgagtcg cgcgaatccc cgcgggtcgt atcagatcgc cgtcgtcgggt 240  
 ctcaaagggtg gggctggcaa aaccacgctg acagcagcgt tggggtcgac gttgggtcag 300  
 gtgcggggccg accggatcct ggctctagac gcggatccag gcgccgaaa cctcgccgat 360  
 cgggtagggc gacaatcggg cgcgaccatc gctgatgtgc ttgcagaaaa agagctgtcg 420  
 cactacaacg acatccgcg acacactagc gtcaatgcgg tcaatctgga agtgctgccc 480  
 gcaccggaat acagctcggc gcagcgcgcg ctcagcgacg ccgactggca tttcatcgcc 540  
 gatcctgcgt cgaggtttta caacctcgtc ttgggtgatt gtggggccgg cttcttcgac 600  
 ccgctgaccc gcggcggtgt gtccacggtg tccggtgtcg tggtcgtggc aagtgtctca 660

atcgacggcg cacaacaggc gtcggtcgcg ttggactggg tgcgcaacaa cggttaccaa 720  
gatttggcga gccgcgcatg cgtgggtcatc aatcacatca tgccgggaga acccaatgtc 780  
gcagttaaag acctggtgcg gcatttcgaa cagcaagttc aaccgggccg ggtcgtggtc 840  
atgccgtggg acaggcacat tgcggccgga accgagattt cactcgactt gctcgaccct 900  
atctacaagc gcaaggctcct cgaattggcc gcagcgctat ccgacgattt cgagagggct 960  
ggacgtcggt gagcgcacct gctgttgctg ctggtcctac 1000

<210> 94  
<211> 308  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 94

Met	Lys	Lys	Val	Lys	Pro	Gln	Lys	Pro	Lys	Ala	Thr	Lys	Pro	Pro	Lys	1	5	10	15
Val	Val	Ser	Gln	Arg	Gly	Trp	Arg	His	Trp	Val	His	Ala	Leu	Thr	Arg	20	25	30	
Ile	Asn	Leu	Gly	Leu	Ser	Pro	Asp	Glu	Lys	Tyr	Glu	Leu	Asp	Leu	His	35	40	45	
Ala	Arg	Val	Arg	Arg	Asn	Pro	Arg	Gly	Ser	Tyr	Gln	Ile	Ala	Val	Val	50	55	60	
Gly	Leu	Lys	Gly	Gly	Ala	Gly	Lys	Thr	Thr	Leu	Thr	Ala	Ala	Leu	Gly	65	70	75	80
Ser	Thr	Leu	Ala	Gln	Val	Arg	Ala	Asp	Arg	Ile	Leu	Ala	Leu	Asp	Ala	85	90	95	
Asp	Pro	Gly	Ala	Gly	Asn	Leu	Ala	Asp	Arg	Val	Gly	Arg	Gln	Ser	Gly	100	105	110	
Ala	Thr	Ile	Ala	Asp	Val	Leu	Ala	Glu	Lys	Glu	Leu	Ser	His	Tyr	Asn	115	120	125	
Asp	Ile	Arg	Ala	His	Thr	Ser	Val	Asn	Ala	Val	Asn	Leu	Glu	Val	Leu	130	135	140	
Pro	Ala	Pro	Glu	Tyr	Ser	Ser	Ala	Gln	Arg	Ala	Leu	Ser	Asp	Ala	Asp	145	150	155	160
Trp	His	Phe	Ile	Ala	Asp	Pro	Ala	Ser	Arg	Phe	Tyr	Asn	Leu	Val	Leu	165	170	175	
Ala	Asp	Cys	Gly	Ala	Gly	Phe	Phe	Asp	Pro	Leu	Thr	Arg	Gly	Val	Leu	180	185	190	
Ser	Thr	Val	Ser	Gly	Val	Val	Val	Val	Ala	Ser	Val	Ser	Ile	Asp	Gly				

195	200	205
Ala Gln Gln Ala Ser Val	Ala Leu Asp Trp Leu	Arg Asn Asn Gly Tyr
210	215	220
Gln Asp Leu Ala Ser Arg	Ala Cys Val Val Ile	Asn His Ile Met Pro
225	230	235 240
Gly Glu Pro Asn Val Ala	Val Lys Asp Leu Val	Arg His Phe Glu Gln
245	250	255
Gln Val Gln Pro Gly Arg	Val Val Val Met Pro	Trp Asp Arg His Ile
260	265	270
Ala Ala Gly Thr Glu Ile	Ser Leu Asp Leu Leu	Asp Pro Ile Tyr Lys
275	280	285
Arg Lys Val Leu Glu Leu	Ala Ala Ala Leu Ser	Asp Asp Phe Glu Arg
290	295	300

Ala Gly Arg Arg  
305

<210> 95  
 <211> 34  
 <212> DNA  
 <213> Mycobacterium tuberculosis

<400> 95  
 aagagtagat ctatgatggc cgaggatggt cgcg

34

<210> 96  
 <211> 27  
 <212> DNA  
 <213> Mycobacterium tuberculosis

<400> 96  
 cggcgacgac ggatcctacc gcgtcgg

27

<210> 97  
 <211> 28  
 <212> DNA  
 <213> Mycobacterium tuberculosis

<400> 97  
 ccttgggaga tctttggacc ccggttgc

28

<210> 98  
 <211> 25  
 <212> DNA  
 <213> Mycobacterium tuberculosis

<400> 98  
 gacgagatct tatgggctta ctgac

25

<210> 99  
<211> 33  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 99  
ccccccagat ctgcaccacc ggcatcggcg ggc 33

<210> 100  
<211> 24  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 100  
gcggcggatc cggttgcttag ccgg 24

<210> 101  
<211> 32  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 101  
ccggctgaga tctatgacag aatacgaagg gc 32

<210> 102  
<211> 24  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 102  
ccccgccagg gaactagagg cggc 24

<210> 103  
<211> 38  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 103  
ctgccgagat ctaccacat tgtcgcgctg aaataccc 38

<210> 104  
<211> 25  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 104  
cgccatggcc ttacgcgcca actcg 25

<210> 105

<211> 32  
 <212> DNA  
 <213> Mycobacterium tuberculosis  
  
 <400> 105  
 ggcgagatc tgtgagtttt ccgtatttca tc 32  
  
 <210> 106  
 <211> 25  
 <212> DNA  
 <213> Mycobacterium tuberculosis  
  
 <400> 106  
 cgcgtagc catggtagg cgag 25  
  
 <210> 107  
 <211> 32  
 <212> DNA  
 <213> Mycobacterium tuberculosis  
  
 <400> 107  
 gaggaagatc tatgacaact tcacccgacc cg 32  
  
 <210> 108  
 <211> 28  
 <212> DNA  
 <213> Mycobacterium tuberculosis  
  
 <400> 108  
 catgaagcca tggcccgag gctgcatg 28  
  
 <210> 109  
 <211> 33  
 <212> DNA  
 <213> Mycobacterium tuberculosis  
  
 <400> 109  
 ggccgagatc tgtgaccac tatgacgtcg tcg 33  
  
 <210> 110  
 <211> 36  
 <212> DNA  
 <213> Mycobacterium tuberculosis  
  
 <400> 110  
 ggcgcccatg gtcagaaatt gatcatgtgg ccaacc 36  
  
 <210> 111  
 <211> 33  
 <212> DNA  
 <213> Mycobacterium tuberculosis

<400> 111  
 ccgggagatc tatggcaaag ctctccaccg acg 33

<210> 112  
 <211> 32  
 <212> DNA  
 <213> Mycobacterium tuberculosis

<400> 112  
 cgctgggcag agctacttga cggtgacggt gg 32

<210> 113  
 <211> 36  
 <212> DNA  
 <213> Mycobacterium tuberculosis

<400> 113  
 ggcccagatc tatggccatt gaggtttcgg tgttgc 36

<210> 114  
 <211> 26  
 <212> DNA  
 <213> Mycobacterium tuberculosis

<400> 114  
 cgccgtgttg catggcagcg ctgagc 26

<210> 115  
 <211> 24  
 <212> DNA  
 <213> Mycobacterium tuberculosis

<400> 115  
 ggacgttcaa gcgacacatc gccg 24

<210> 116  
 <211> 24  
 <212> DNA  
 <213> Mycobacterium tuberculosis

<400> 116  
 cagcacgaac gcgccgtcga tggc 24

<210> 117  
 <211> 26  
 <212> DNA  
 <213> Mycobacterium tuberculosis

<400> 117  
 acagatctgt gacggacatg aaccgg 26

<210> 118  
<211> 28  
<212> DNA  
<213> Mycobacterium tuberculosis  
  
<400> 118  
ttttccatgg tcacgggccc ccggtact 28

<210> 119  
<211> 26  
<212> DNA  
<213> Mycobacterium tuberculosis  
  
<400> 119  
acagatctgt gcccatggca cagata 26

<210> 120  
<211> 27  
<212> DNA  
<213> Mycobacterium tuberculosis  
  
<400> 120  
tttaagcttc taggcgccca gcgcggc 27

<210> 121  
<211> 26  
<212> DNA  
<213> Mycobacterium tuberculosis  
  
<400> 121  
acagatctgc gcatgcggat ccgtgt 26

<210> 122  
<211> 28  
<212> DNA  
<213> Mycobacterium tuberculosis  
  
<400> 122  
ttttccatgg tcatccggcg tgatcgag 28

<210> 123  
<211> 26  
<212> DNA  
<213> Mycobacterium tuberculosis  
  
<400> 123  
acagatctgt aatggcagac tgtgat 26

<210> 124



<211> 28  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 124  
ttttccatgg tcaggagatg gtgatcga 28

<210> 125  
<211> 26  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 125  
acagatctgc cggctacccc ggtgcc 26

<210> 126  
<211> 28  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 126  
ttttccatgg ctattgcagc tttccggc 28

<210> 127  
<211> 50  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 127

Ala Glu Asp Val Arg Ala Glu Ile Val Ala Ser Val Leu Glu Val Val  
1 5 10 15

Val Asn Glu Gly Asp Gln Ile Asp Lys Gly Asp Val Val Val Leu Leu  
20 25 30

Glu Ser Met Tyr Met Glu Ile Pro Val Leu Ala Glu Ala Ala Gly Thr  
35 40 45

Val Ser  
50

<210> 128  
<211> 49  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 128

Ala Glu Asp Val Arg Ala Glu Ile Val Ala Ser Val Leu Glu Val Val  
1 5 10 15

Val Asn Glu Gly Asp Gln Ile Asp Lys Gly Asp Val Val Val Leu Leu  
20 25 30

Glu Ser Met Met Glu Ile Pro Val Leu Ala Glu Ala Ala Gly Thr Val  
35 40 45

Ser

<210> 129  
<211> 50  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 129

Ala Glu Asp Val Arg Ala Glu Ile Val Ala Ser Val Leu Glu Val Val  
1 5 10 15

Val Asn Glu Gly Asp Gln Ile Asp Lys Gly Asp Val Val Val Leu Leu  
20 25 30

Glu Ser Met Lys Met Glu Ile Pro Val Leu Ala Glu Ala Ala Gly Thr  
35 40 45

Val Ser  
50

<210> 130  
<211> 33  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 130  
ccgggagatc tatggcaaag ctctccaccg acg 33

<210> 131  
<211> 32  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 131  
cgctgggcag agctacttga cggtgacggt gg 32

<210> 132  
<211> 36  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 132  
ggcgccggca agcttgccat gacagagcag cagtgg 36

<210> 133  
<211> 26  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 133	
cgaactcgcc ggatcccgtg tttcgc	26
<210> 134	
<211> 32	
<212> DNA	
<213> Mycobacterium tuberculosis	
<400> 134	
ggcaaccgcg agatctttct cccggccggg gc	32
<210> 135	
<211> 27	
<212> DNA	
<213> Mycobacterium tuberculosis	
<400> 135	
ggcaagcttg ccggcgcta acgaact	27
<210> 136	
<211> 30	
<212> DNA	
<213> Mycobacterium tuberculosis	
<400> 136	
ggaccagat ctatgacaga gcagcagtgg	30
<210> 137	
<211> 47	
<212> DNA	
<213> Mycobacterium tuberculosis	
<400> 137	
ccggcagccc cggccgggag aaaagctttg cgaacatccc agtgacg	47
<210> 138	
<211> 44	
<212> DNA	
<213> Mycobacterium tuberculosis	
<400> 138	
gttcgcaaag cttttctccc ggccggggct gccggtcgag tacc	44
<210> 139	
<211> 20	
<212> DNA	
<213> Mycobacterium tuberculosis	
<400> 139	
ccttcggtgg atcccgtcag	20

<210> 140  
 <211> 450  
 <212> DNA  
 <213> Mycobacterium tuberculosis

<400> 140  
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 ggccagcatg aacgtcaccg tatccattcc gaccatcctg cggccccaca ccggcggcca 120  
 gaagagtgtc tgggccagcg gcgatacctt ggggtgccgtc atcagcgacc tggaggccaa 180  
 ctattcgggc atttccgagc gcctgatgga cccgtcttcc ccaggtaagt tgcaccgctt 240  
 cgtgaacatc tacgtcaacg acgaggacgt gcggttctcc ggcggcttgg ccaccgcgat 300  
 cgctgacggg gactcgggtc ccatacctccc cgccgtggcc ggtgggtgag cggagcacat 360  
 gacacgatac gactcgtgtg tgcaggcctt gggcaacacg ccgctgggtg gcctgcagcg 420  
 attgtcgcca cgctgggatg acgggcgaga 450

<210> 141  
 <211> 93  
 <212> PRT  
 <213> Mycobacterium tuberculosis

<400> 141  
 Met Asn Val Thr Val Ser Ile Pro Thr Ile Leu Arg Pro His Thr Gly  
 1 5 10 15  
 Gly Gln Lys Ser Val Ser Ala Ser Gly Asp Thr Leu Gly Ala Val Ile  
 20 25 30  
 Ser Asp Leu Glu Ala Asn Tyr Ser Gly Ile Ser Glu Arg Leu Met Asp  
 35 40 45  
 Pro Ser Ser Pro Gly Lys Leu His Arg Phe Val Asn Ile Tyr Val Asn  
 50 55 60  
 Asp Glu Asp Val Arg Phe Ser Gly Gly Leu Ala Thr Ala Ile Ala Asp  
 65 70 75 80  
 Gly Asp Ser Val Thr Ile Leu Pro Ala Val Ala Gly Gly  
 85 90

<210> 142  
 <211> 480  
 <212> DNA  
 <213> Mycobacterium tuberculosis

<400> 142  
 ggtgttcccg cggccggcta tgacaacagt caatgtgcat gacaagttac aggtattagg 60

tccagggttca	acaaggagagac	aggcaacatg	gcaacacggt	ttatgacgga	tccgcacgcg	120
atgcggggaca	tggcggggccg	ttttgagggtg	cacgcccaga	cgggtggagga	cgagggtcgc	180
cggatgtggg	cgtccgcgca	aaacatctcg	ggcgcgggct	ggagtggcat	ggccgagggc	240
acctcgctag	acaccatggc	ccagatgaat	caggcgtttc	gcaacatcgt	gaacatgctg	300
cacgggggtgc	gtgacgggct	ggttcgcgac	gccacaact	acgagcagca	agagcaggcc	360
tcccagcaga	tcctcagcag	ctaacgtcag	ccgctgcagc	acaatacttt	tacaagcgaa	420
qqqaacacgg	ttcgatgacc	atcaactatc	agttcqqtga	tgtcgaagct	catggcgcca	480

<400> 143

Gly Arg Phe Glu Val His Ala Gln Thr Val Glu Asp Glu Ala Arg Arg  
20 25 30

Ala Glu Ala Thr Ser Leu Asp Thr Met Ala Gln Met Asn Gln Ala Phe  
50 55 60

Asp Ala Asn Asn Tyr Glu Gln Gln Glu Gln Ala Ser Gln Gln Ile Leu  
85 90 95

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<210> 144
<211> 940
<212> DNA
<213> Mycobacterium tuberculosis
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cacgctgaac ggcgaagccg tggccgccat cgcaccgatg cccccgggtg caccggaggg 300  
gatgccgccg atctggaaca cctatatcgc ggtggacgac gtcgatgcgg tggaggacaa 360  
ggtggtgccc gggggcgggc aggtgatgat gccggccttc gacatcggcg atgccggccg 420  
gatgtcgttc atcaccgatc cgaccggcgc tgccgtgggc ctatggcagg ccaatcggca 480  
catcggagcg acgttggtca acgagacggg cacgctcatc tggaacgaac tgctcacgga 540  
caagccggat ttggcgctag cgttctacga ggctgtggtt ggctcacc actcgagcat 600  
ggagatagct gcgggccaga actatcgggt gctcaaggcc ggcgacgcgg aagtcggcgg 660  
ctgtatggaa ccgccgatgc ccggcgtgcc gaatcattgg cacgtctact ttgcggtgga 720  
tgacgccgac gccacggcgg ccaaagccgc cgcagcgggc ggccaggtca ttgcggaacc 780  
ggctgacatt ccgtcggtgg gccggttcgc cgtgttggtc gatccgcagg gcgcgatctt 840  
cagtgtgttg aagccgcac cgcagcaata gggagcatcc cgggcaggcc cgccggccgg 900  
cagattcgga gaatgctaga agctgccgcc ggcgccgccg 940

<210> 145  
<211> 261  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 145

Met	Pro	Lys	Arg	Ser	Glu	Tyr	Arg	Gln	Gly	Thr	Pro	Asn	Trp	Val	Asp	1	5	10	15
Leu	Gln	Thr	Thr	Asp	Gln	Ser	Ala	Ala	Lys	Lys	Phe	Tyr	Thr	Ser	Leu	20	25	30	
Phe	Gly	Trp	Gly	Tyr	Asp	Asp	Asn	Pro	Val	Pro	Gly	Gly	Gly	Gly	Val	35	40	45	
Tyr	Ser	Met	Ala	Thr	Leu	Asn	Gly	Glu	Ala	Val	Ala	Ala	Ile	Ala	Pro	50	55	60	
Met	Pro	Pro	Gly	Ala	Pro	Glu	Gly	Met	Pro	Pro	Ile	Trp	Asn	Thr	Tyr	65	70	75	80
Ile	Ala	Val	Asp	Asp	Val	Asp	Ala	Val	Val	Asp	Lys	Val	Val	Pro	Gly	85	90	95	
Gly	Gly	Gln	Val	Met	Met	Pro	Ala	Phe	Asp	Ile	Gly	Asp	Ala	Gly	Arg	100	105	110	
Met	Ser	Phe	Ile	Thr	Asp	Pro	Thr	Gly	Ala	Ala	Val	Gly	Leu	Trp	Gln	115	120	125	

Ala Asn Arg His Ile Gly Ala Thr Leu Val Asn Glu Thr Gly Thr Leu  
130 135 140

Ile Trp Asn Glu Leu Leu Thr Asp Lys Pro Asp Leu Ala Leu Ala Phe  
145 150 155 160

Tyr Glu Ala Val Val Gly Leu Thr His Ser Ser Met Glu Ile Ala Ala  
165 170 175

Gly Gln Asn Tyr Arg Val Leu Lys Ala Gly Asp Ala Glu Val Gly Gly  
180 185 190

Cys Met Glu Pro Pro Met Pro Gly Val Pro Asn His Trp His Val Tyr  
195 200 205

Phe Ala Val Asp Asp Ala Asp Ala Thr Ala Ala Lys Ala Ala Ala Ala  
210 215 220

Gly Gly Gln Val Ile Ala Glu Pro Ala Asp Ile Pro Ser Val Gly Arg  
225 230 235 240

Phe Ala Val Leu Ser Asp Pro Gln Gly Ala Ile Phe Ser Val Leu Lys  
245 250 255

Pro Ala Pro Gln Gln  
260

<210> 146  
<211> 280  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 146  
ccgaaaggcg gtgcaccgca cccagaagaa aaggaaagat cgagaaatgc cacagggaac 60  
tgtgaagtgg ttcaacgcgg agaagggggtt cggttttata gccccgaag acggttccgc 120  
ggatgtatatt gtccactaca cggagatcca gggaacgggc ttccgcaccc ttgaagaaaa 180  
ccagaaggtc gagttcgaga tcggccacag ccctaagggc ccccaggcca ccggagtccg 240  
ctcgctctga gttacccccg cgagcagacg caaaaagccc 280

<210> 147  
<211> 67  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 147

Met Pro Gln Gly Thr Val Lys Trp Phe Asn Ala Glu Lys Gly Phe Gly  
1 5 10 15

Phe Ile Ala Pro Glu Asp Gly Ser Ala Asp Val Phe Val His Tyr Thr  
20 25 30

Glu Ile Gln Gly Thr Gly Phe Arg Thr Leu Glu Glu Asn Gln Lys Val  
35 40 45

Glu Phe Glu Ile Gly His Ser Pro Lys Gly Pro Gln Ala Thr Gly Val  
50 55 60

Arg Ser Leu  
65

<210> 148  
<211> 540  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 148  
atcgtgtcgt atcgagaacc ccggccggta tcagaacgcg ccagagcgca aacctttata 60  
acttcgtgtc ccaaattgtga cgaccatgga ccaagggtcc tgagatgaac ctacggcgcc 120  
atcagaccct gacgctgcga ctgctggcgg catccgcggg cattctcagc gccgcggcct 180  
tcgccgcgcc agcacaggca aaccccgctg acgacgcgtt catcgccgcg ctgaacaatg 240  
ccggcggtcaa ctacggcgat ccggtcgacg ccaaagcgct gggtcagtcc gtctgcccga 300  
tcctggccga gcccggcggg tcgtttaaca ccgcggtagc cagcgttggtg gcgcgcgccc 360  
aaggcatgtc ccaggacatg gcgcaaacct tcaccagtat cgcgatttcg atgtactgcc 420  
cctcggtgat ggcagacgtc gccagcggca acctgccggc cctgccagac atgccggggc 480  
tgccccgggtc ctaggcgtgc gcggctccta gccggtcctt aacggatcga tcgtggatgc 540

<210> 149  
<211> 129  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 149

Met Asn Leu Arg Arg His Gln Thr Leu Thr Leu Arg Leu Leu Ala Ala  
1 5 10 15

Ser Ala Gly Ile Leu Ser Ala Ala Ala Phe Ala Ala Pro Ala Gln Ala  
20 25 30

Asn Pro Val Asp Asp Ala Phe Ile Ala Ala Leu Asn Asn Ala Gly Val  
35 40 45

Asn Tyr Gly Asp Pro Val Asp Ala Lys Ala Leu Gly Gln Ser Val Cys  
50 55 60

Pro Ile Leu Ala Glu Pro Gly Gly Ser Phe Asn Thr Ala Val Ala Ser  
65 70 75 80

Val Val Ala Arg Ala Gln Gly Met Ser Gln Asp Met Ala Gln Thr Phe



	85		90		95
Thr Ser Ile	Ala Ile Ser Met Tyr Cys Pro Ser Val Met Ala Asp Val				
	100		105		110
Ala Ser Gly	Asn Leu Pro Ala Leu Pro Asp Met Pro Gly Leu Pro Gly				
	115		120		125

Ser

<210> 150  
 <211> 400  
 <212> DNA  
 <213> Mycobacterium tuberculosis

<400> 150	
atagtttggg gaaggtgtcc ataaatgagg ctgtcgttga ccgcattgag cgccggtgta	60
ggcgccgtgg caatgtcgtt gaccgtcggg gccgggggtcg cctccgcaga tcccgtggac	120
gcggtcatta acaccacctg caattacggg caggtagtag ctgcgtcaa cgcgacggat	180
ccgggggctg ccgcacagtt caacgcctca ccggtggcgc agtcctattt gcgcaatttc	240
ctcgccgcac cgccacctca gcgcgtgcc atggccgcgc aattgcaagc tgtgccgggg	300
gcggcacagt acatcggcct tgtcgagtcg gttgccggct cctgcaaaa ctattaagcc	360
catgcccccc ccatccccgcg acccggcatc gtcgccgggg	400

<210> 151  
 <211> 110  
 <212> PRT  
 <213> Mycobacterium tuberculosis

<400> 151

Met Arg Leu Ser Leu Thr Ala Leu Ser Ala Gly Val Gly Ala Val Ala	
1 5 10 15	
Met Ser Leu Thr Val Gly Ala Gly Val Ala Ser Ala Asp Pro Val Asp	
20 25 30	
Ala Val Ile Asn Thr Thr Cys Asn Tyr Gly Gln Val Val Ala Ala Leu	
35 40 45	
Asn Ala Thr Asp Pro Gly Ala Ala Ala Gln Phe Asn Ala Ser Pro Val	
50 55 60	
Ala Gln Ser Tyr Leu Arg Asn Phe Leu Ala Ala Pro Pro Pro Gln Arg	
65 70 75 80	
Ala Ala Met Ala Ala Gln Leu Gln Ala Val Pro Gly Ala Ala Gln Tyr	
85 90 95	

Ile Gly Leu Val Glu Ser Val Ala Gly Ser Cys Asn Asn Tyr  
100 105 110

<210> 152  
<211> 990  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 152  
aatagtaata tcgctgtgcg gttgcaaaac gtgtgaccga ggttccgcag tcgagcgctg 60  
cgggccgcct tcgaggagga cgaaccacag tcatgacgaa catcgtggtc ctgatcaagc 120  
aggtcccaga tacctggctg gagcgcaagc tgaccgacgg cgatttcacg ctggaccgcg 180  
aggccgccga cgcggtgctg gacgagatca acgagcgcgc cgtggaggaa gcgctacaga 240  
ttcgggagaa agaggccgcc gacggcatcg aagggtcggg aaccgtgctg acggcggggc 300  
ccgagcgcgc caccgaggcg atccgcaagg cgctgtcgat gggtgccgac aaggccgtcc 360  
acctaaagga cgacggcatg cacggctcgg acgtcatcca aaccgggtgg gctttggcgc 420  
gcgcgttggg caccatcgag ggcaccgagc tggatgatcg aggcaacgaa tcgaccgacg 480  
gggtgggcgg tcggtgccc gccatcatcg ccgagtacct gggcctgccg cagctcacc 540  
acctgcgcaa agtgtcgatc gagggcggca agatcaccgg cgagcgtgag accgatgagg 600  
gcgtattcac cctcgaggcc acgtgcccg cggatgatcg cgtgaacgag aagatcaacg 660  
agccgcgctt cccgtccttc aaaggcatca tggccgcca gaagaaggaa gttaccgtgc 720  
tgaccctggc cgagatcggg gtcgagagcg acgaggtggg gctggccaac gccggatcca 780  
ccgtgctggc gtcgacgccc aaaccggcca agactgccgg ggagaaggtc accgacgagg 840  
gtgaaggcgg caaccagatc gtgcagtacc tggttgcca gaaaatcatc taagacatac 900  
gcacctcca aagacgagag cgatataacc catggctgaa gtactggtgc tcgttgagca 960  
cgctgaaggc gcgttaaaga aggtcagcgc 990

<210> 153  
<211> 266  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 153

Met Thr Asn Ile Val Val Leu Ile Lys Gln Val Pro Asp Thr Trp Ser  
1 5 10 15

Glu Arg Lys Leu Thr Asp Gly Asp Phe Thr Leu Asp Arg Glu Ala Ala  
20 25 30

Asp Ala Val Leu Asp Glu Ile Asn Glu Arg Ala Val Glu Glu Ala Leu  
 35 40 45  
 Gln Ile Arg Glu Lys Glu Ala Ala Asp Gly Ile Glu Gly Ser Val Thr  
 50 55 60  
 Val Leu Thr Ala Gly Pro Glu Arg Ala Thr Glu Ala Ile Arg Lys Ala  
 65 70 75 80  
 Leu Ser Met Gly Ala Asp Lys Ala Val His Leu Lys Asp Asp Gly Met  
 85 90 95  
 His Gly Ser Asp Val Ile Gln Thr Gly Trp Ala Leu Ala Arg Ala Leu  
 100 105 110  
 Gly Thr Ile Glu Gly Thr Glu Leu Val Ile Ala Gly Asn Glu Ser Thr  
 115 120 125  
 Asp Gly Val Gly Gly Ala Val Pro Ala Ile Ile Ala Glu Tyr Leu Gly  
 130 135 140  
 Leu Pro Gln Leu Thr His Leu Arg Lys Val Ser Ile Glu Gly Gly Lys  
 145 150 155 160  
 Ile Thr Gly Glu Arg Glu Thr Asp Glu Gly Val Phe Thr Leu Glu Ala  
 165 170 175  
 Thr Leu Pro Ala Val Ile Ser Val Asn Glu Lys Ile Asn Glu Pro Arg  
 180 185 190  
 Phe Pro Ser Phe Lys Gly Ile Met Ala Ala Lys Lys Lys Glu Val Thr  
 195 200 205  
 Val Leu Thr Leu Ala Glu Ile Gly Val Glu Ser Asp Glu Val Gly Leu  
 210 215 220  
 Ala Asn Ala Gly Ser Thr Val Leu Ala Ser Thr Pro Lys Pro Ala Lys  
 225 230 235 240  
 Thr Ala Gly Glu Lys Val Thr Asp Glu Gly Glu Gly Gly Asn Gln Ile  
 245 250 255  
 Val Gln Tyr Leu Val Ala Gln Lys Ile Ile  
 260 265

<210> 154  
 <211> 25  
 <212> DNA  
 <213> Mycobacterium tuberculosis

<400> 154  
 ctgagatcta tgaacctacg gcgcc

25

<210> 155  
 <211> 35  
 <212> DNA

<213> Mycobacterium tuberculosis

<400> 155

ctcccatggt accctaggac ccgggcagcc ccggc

35

<210> 156

<211> 29

<212> DNA

<213> Mycobacterium tuberculosis

<400> 156

ctgagatcta tgaggctgtc gttgaccgc

29

<210> 157

<211> 30

<212> DNA

<213> Mycobacterium tuberculosis

<400> 157

ctccccgggc ttaatagttg ttgcaggagc

30

<210> 158

<211> 33

<212> DNA

<213> Mycobacterium tuberculosis

<400> 158

gcttagatct atgattttct gggcaaccag gta

33

<210> 159

<211> 30

<212> DNA

<213> Mycobacterium tuberculosis

<400> 159

gcttccatgg gcgaggcaca ggcgtgggaa

30

<210> 160

<211> 30

<212> DNA

<213> Mycobacterium tuberculosis

<400> 160

ctgagatcta gaatgccaca gggaactgtg

30

<210> 161

<211> 30

<212> DNA

<213> Mycobacterium tuberculosis

<400> 161

tctccccggg gtaactcaga gcgagcggac 30

<210> 162  
<211> 27  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 162  
ctgagatcta tgaacgtcac cgtatcc 27

<210> 163  
<211> 27  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 163  
tctccccggg ctcacccacc ggccacg 27

<210> 164  
<211> 30  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 164  
ctgagatcta tggcaacacg ttttatgacg 30

<210> 165  
<211> 30  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 165  
ctccccgggt tagctgctga ggatctgcth 30

<210> 166  
<211> 31  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 166  
ctgaagatct atgcccaaga gaagcgaata c 31

<210> 167  
<211> 31  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 167  
cggcagctgc tagcattctc cgaatctgcc g 31

<210> 168  
<211> 15  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 168

Pro	Gln	Gly	Thr	Val	Lys	Trp	Phe	Asn	Ala	Glu	Lys	Gly	Phe	Gly
1				5					10					15

<210> 169  
<211> 15  
<212> PRT  
<213> Mycobacterium tuberculosis

<220>  
<221> misc\_feature  
<222> (15)..(15)  
<223> "Xaa" is unknown

<220>  
<221> misc\_feature  
<222> (13)..(13)  
<223> "Xaa" is unknown

<220>  
<221> misc\_feature  
<222> (14)..(14)  
<223> "Xaa" is unknown

<400> 169

Asn	Val	Thr	Val	Ser	Ile	Pro	Thr	Ile	Leu	Arg	Pro	Xaa	Xaa	Xaa
1				5					10					15

<210> 170  
<211> 15  
<212> PRT  
<213> Mycobacterium tuberculosis

<220>  
<221> variant  
<222> (1)..(1)  
<223> Thr can be Thr or Ala

<400> 170

Thr	Arg	Phe	Met	Thr	Asp	Pro	His	Ala	Met	Arg	Asp	Met	Ala	Gly
1				5					10					15

<210> 171  
<211> 15  
<212> PRT

<213> Mycobacterium tuberculosis

<400> 171

Pro Lys Arg Ser Glu Tyr Arg Gln Gly Thr Pro Asn Trp Val Asp  
1 5 10 15

<210> 172

<211> 404

<212> PRT

<213> Mycobacterium tuberculosis

<400> 172

Met Ala Thr Val Asn Arg Ser Arg His His His His His His His His  
1 5 10 15

Ile Glu Gly Arg Ser Phe Ser Arg Pro Gly Leu Pro Val Glu Tyr Leu  
20 25 30

Gln Val Pro Ser Pro Ser Met Gly Arg Asp Ile Lys Val Gln Phe Gln  
35 40 45

Ser Gly Gly Asn Asn Ser Pro Ala Val Tyr Leu Leu Asp Gly Leu Arg  
50 55 60

Ala Gln Asp Asp Tyr Asn Gly Trp Asp Ile Asn Thr Pro Ala Phe Glu  
65 70 75 80

Trp Tyr Tyr Gln Ser Gly Leu Ser Ile Val Met Pro Val Gly Gly Gln  
85 90 95

Ser Ser Phe Tyr Ser Asp Trp Tyr Ser Pro Ala Cys Gly Lys Ala Gly  
100 105 110

Cys Gln Thr Tyr Lys Trp Glu Thr Phe Leu Thr Ser Glu Leu Pro Gln  
115 120 125

Trp Leu Ser Ala Asn Arg Ala Val Lys Pro Thr Gly Ser Ala Ala Ile  
130 135 140

Gly Leu Ser Met Ala Gly Ser Ser Ala Met Ile Leu Ala Ala Tyr His  
145 150 155 160

Pro Gln Gln Phe Ile Tyr Ala Gly Ser Leu Ser Ala Leu Leu Asp Pro  
165 170 175

Ser Gln Gly Met Gly Pro Ser Leu Ile Gly Leu Ala Met Gly Asp Ala  
180 185 190

Gly Gly Tyr Lys Ala Ala Asp Met Trp Gly Pro Ser Ser Asp Pro Ala  
195 200 205

Trp Glu Arg Asn Asp Pro Thr Gln Gln Ile Pro Lys Leu Val Ala Asn  
210 215 220

Asn Thr Arg Leu Trp Val Tyr Cys Gly Asn Gly Thr Pro Asn Glu Leu

225		230		235		240
Gly Gly Ala Asn Ile Pro Ala Glu Phe Leu Glu Asn Phe Val Arg Ser						
	245			250		255
Ser Asn Leu Lys Phe Gln Asp Ala Tyr Asn Ala Ala Gly Gly His Asn						
	260			265		270
Ala Val Phe Asn Phe Pro Pro Asn Gly Thr His Ser Trp Glu Tyr Trp						
	275			280		285
Gly Ala Gln Leu Asn Ala Met Lys Gly Asp Leu Gln Ser Ser Leu Gly						
	290			295		300
Ala Gly Lys Leu Ala Met Thr Glu Gln Gln Trp Asn Phe Ala Gly Ile						
305		310		315		320
Glu Ala Ala Ala Ser Ala Ile Gln Gly Asn Val Thr Ser Ile His Ser						
	325			330		335
Leu Leu Asp Glu Gly Lys Gln Ser Leu Thr Lys Leu Ala Ala Ala Trp						
	340			345		350
Gly Gly Ser Gly Ser Glu Ala Tyr Gln Gly Val Gln Gln Lys Trp Asp						
	355			360		365
Ala Thr Ala Thr Glu Leu Asn Asn Ala Leu Gln Asn Leu Ala Arg Thr						
	370			375		380
Ile Ser Glu Ala Gly Gln Ala Met Ala Ser Thr Glu Gly Asn Val Thr						
385		390		395		400
Gly Met Phe Ala						

<210> 173  
 <211> 403  
 <212> PRT  
 <213> Mycobacterium tuberculosis

<400> 173

Met Ala Thr Val Asn Arg Ser Arg His His His His His His His														
1				5					10					15
Ile Glu Gly Arg Ser Met Thr Glu Gln Gln Trp Asn Phe Ala Gly Ile														
	20							25					30	
Glu Ala Ala Ala Ser Ala Ile Gln Gly Asn Val Thr Ser Ile His Ser														
	35						40				45			
Leu Leu Asp Glu Gly Lys Gln Ser Leu Thr Lys Leu Ala Ala Ala Trp														
	50					55					60			
Gly Gly Ser Gly Ser Glu Ala Tyr Gln Gly Val Gln Gln Lys Trp Asp														
65				70					75					80



Ala	Thr	Ala	Thr	Glu	Leu	Asn	Asn	Ala	Leu	Gln	Asn	Leu	Ala	Arg	Thr	85	90	95
Ile	Ser	Glu	Ala	Gly	Gln	Ala	Met	Ala	Ser	Thr	Glu	Gly	Asn	Val	Thr	100	105	110
Gly	Met	Phe	Ala	Lys	Leu	Phe	Ser	Arg	Pro	Gly	Leu	Pro	Val	Glu	Tyr	115	120	125
Leu	Gln	Val	Pro	Ser	Pro	Ser	Met	Gly	Arg	Asp	Ile	Lys	Val	Gln	Phe	130	135	140
Gln	Ser	Gly	Gly	Asn	Asn	Ser	Pro	Ala	Val	Tyr	Leu	Leu	Asp	Gly	Leu	145	150	155
Arg	Ala	Gln	Asp	Asp	Tyr	Asn	Gly	Trp	Asp	Ile	Asn	Thr	Pro	Ala	Phe	165	170	175
Glu	Trp	Tyr	Tyr	Gln	Ser	Gly	Leu	Ser	Ile	Val	Met	Pro	Val	Gly	Gly	180	185	190
Gln	Ser	Ser	Phe	Tyr	Ser	Asp	Trp	Tyr	Ser	Pro	Ala	Cys	Gly	Lys	Ala	195	200	205
Gly	Cys	Gln	Thr	Tyr	Lys	Trp	Glu	Thr	Phe	Leu	Thr	Ser	Glu	Leu	Pro	210	215	220
Gln	Trp	Leu	Ser	Ala	Asn	Arg	Ala	Val	Lys	Pro	Thr	Gly	Ser	Ala	Ala	225	230	235
Ile	Gly	Leu	Ser	Met	Ala	Gly	Ser	Ser	Ala	Met	Ile	Leu	Ala	Ala	Tyr	245	250	255
His	Pro	Gln	Gln	Phe	Ile	Tyr	Ala	Gly	Ser	Leu	Ser	Ala	Leu	Leu	Asp	260	265	270
Pro	Ser	Gln	Gly	Met	Gly	Pro	Ser	Leu	Ile	Gly	Leu	Ala	Met	Gly	Asp	275	280	285
Ala	Gly	Gly	Tyr	Lys	Ala	Ala	Asp	Met	Trp	Gly	Pro	Ser	Ser	Asp	Pro	290	295	300
Ala	Trp	Glu	Arg	Asn	Asp	Pro	Thr	Gln	Gln	Ile	Pro	Lys	Leu	Val	Ala	305	310	315
Asn	Asn	Thr	Arg	Leu	Trp	Val	Tyr	Cys	Gly	Asn	Gly	Thr	Pro	Asn	Glu	325	330	335
Leu	Gly	Gly	Ala	Asn	Ile	Pro	Ala	Glu	Phe	Leu	Glu	Asn	Phe	Val	Arg	340	345	350
Ser	Ser	Asn	Leu	Lys	Phe	Gln	Asp	Ala	Tyr	Asn	Ala	Ala	Gly	Gly	His	355	360	365
Asn	Ala	Val	Phe	Asn	Phe	Pro	Pro	Asn	Gly	Thr	His	Ser	Trp	Glu	Tyr	370	375	380

Trp Gly Ala Gln Leu Asn Ala Met Lys Gly Asp Leu Gln Ser Ser Leu  
 385 390 395 400

Gly Ala Gly

<210> 174  
 <211> 291  
 <212> DNA  
 <213> Mycobacterium tuberculosis

<400> 174  
 atgtcgcaga ttatgtacaa ctatccggcg atgatggctc atgccgggga catggccggt 60  
 tatgctggca cgctgcagag cttggggggcc gatatcgcca gtgagcaggc cgtgctgtcc 120  
 agtgcttggc aggggtgatac cgggatcacg tatcagggtt ggcagacca gtggaaccag 180  
 gccctagagg atctggtgcg ggcctatcag tcatgtctg gcacccatga gtccaacacc 240  
 atggcgatgt tggctcgaga tggggccgaa gccgccaagt ggggaggcta g 291

<210> 175  
 <211> 96  
 <212> PRT  
 <213> Mycobacterium tuberculosis

<400> 175  
 Met Ser Gln Ile Met Tyr Asn Tyr Pro Ala Met Met Ala His Ala Gly  
 1 5 10 15  
 Asp Met Ala Gly Tyr Ala Gly Thr Leu Gln Ser Leu Gly Ala Asp Ile  
 20 25 30  
 Ala Ser Glu Gln Ala Val Leu Ser Ser Ala Trp Gln Gly Asp Thr Gly  
 35 40 45  
 Ile Thr Tyr Gln Gly Trp Gln Thr Gln Trp Asn Gln Ala Leu Glu Asp  
 50 55 60  
 Leu Val Arg Ala Tyr Gln Ser Met Ser Gly Thr His Glu Ser Asn Thr  
 65 70 75 80  
 Met Ala Met Leu Ala Arg Asp Gly Ala Glu Ala Ala Lys Trp Gly Gly  
 85 90 95

<210> 176  
 <211> 363  
 <212> DNA  
 <213> Mycobacterium tuberculosis

<400> 176  
 gtgtcgcaga gtatgtacag ctacccggcg atgacggcca atgtcggaga catggccggt. 60  
 tatacgggca cgacgcagag cttggggggcc gatatcgcca gtgagcgac cgcgccgtcg 120

cgtgcttgcc aaggtgatct cgggatgagt catcaggact ggcaggccca gtggaatcag 180  
 gccatggagg ctctcgcgcg ggcctaccgt cggtgccggc gagcactacg ccagatcggg 240  
 gtgctggaag ggccggtagg cgattcgtca gactgcggaa cgattagggg ggggtcgttc 300  
 cggggtcggg ggctggaccc gcgccatgcg ggtccagcca cggccgccga cgccggagac 360  
 taa 363

<210> 177  
 <211> 120  
 <212> PRT  
 <213> Mycobacterium tuberculosis

<400> 177

Met	Ser	Gln	Ser	Met	Tyr	Ser	Tyr	Pro	Ala	Met	Thr	Ala	Asn	Val	Gly
1			5					10					15		
Asp	Met	Ala	Gly	Tyr	Thr	Gly	Thr	Thr	Gln	Ser	Leu	Gly	Ala	Asp	Ile
		20					25					30			
Ala	Ser	Glu	Arg	Thr	Ala	Pro	Ser	Arg	Ala	Cys	Gln	Gly	Asp	Leu	Gly
		35				40					45				
Met	Ser	His	Gln	Asp	Trp	Gln	Ala	Gln	Trp	Asn	Gln	Ala	Met	Glu	Ala
	50				55					60					
Leu	Ala	Arg	Ala	Tyr	Arg	Arg	Cys	Arg	Arg	Ala	Leu	Arg	Gln	Ile	Gly
65				70				75						80	
Val	Leu	Glu	Arg	Pro	Val	Gly	Asp	Ser	Ser	Asp	Cys	Gly	Thr	Ile	Arg
			85					90					95		
Val	Gly	Ser	Phe	Arg	Gly	Arg	Trp	Leu	Asp	Pro	Arg	His	Ala	Gly	Pro
		100					105					110			
Ala	Thr	Ala	Ala	Asp	Ala	Gly	Asp								
		115				120									

<210> 178  
 <211> 297  
 <212> DNA  
 <213> Mycobacterium tuberculosis

<400> 178

atggcctcgc gttttatgac ggatccgcac gcgatgcggg acatggcggg ccgttttgag 60  
 gtgcacgccc agacggtgga ggacgaggct cgccggatgt gggcgtccgc gcaaaacatc 120  
 tcgggcgcgg gctggagtgg catggccgag gcgacctcgc tagacacatc gaccagatg 180  
 aatcaggcgt ttcgcaacat cgtgaacatg ctgcacgggg tgcgtgacgg gctggttcgc 240

gacgccaaca actacgaaca gcaagagcag gcctcccagc agatcctcag cagctga 297

<210> 179  
<211> 98  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 179

Met Ala Ser Arg Phe Met Thr Asp Pro His Ala Met Arg Asp Met Ala  
1 5 10 15

Gly Arg Phe Glu Val His Ala Gln Thr Val Glu Asp Glu Ala Arg Arg  
20 25 30

Met Trp Ala Ser Ala Gln Asn Ile Ser Gly Ala Gly Trp Ser Gly Met  
35 40 45

Ala Glu Ala Thr Ser Leu Asp Thr Met Thr Gln Met Asn Gln Ala Phe  
50 55 60

Arg Asn Ile Val Asn Met Leu His Gly Val Arg Asp Gly Leu Val Arg  
65 70 75 80

Asp Ala Asn Asn Tyr Glu Gln Gln Glu Gln Ala Ser Gln Gln Ile Leu  
85 90 95

Ser Ser

<210> 180  
<211> 297  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 180

atggcctcac gttttatgac ggatccgcac gcgatgcggg acatggcggg ccgttttgag 60

gtgcacgccc agacggtgga ggacgaggct cgccggatgt gggcgtccgc gcaaaacatt 120

tccggtgcgg gctggagtgg catggccgag gcgacctcgc tagacaccat ggcccagatg 180

aatcaggcgt ttcgcaacat cgtgaacatg ctgcacgggg tgcgtgacgg gctggttcgc 240

gacgccaaca actacgagca gcaagagcag gcctcccagc agatcctcag cagctaa 297

<210> 181  
<211> 98  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 181

Met Ala Ser Arg Phe Met Thr Asp Pro His Ala Met Arg Asp Met Ala  
1 5 10 15

Gly Arg Phe Glu Val His Ala Gln Thr Val Glu Asp Glu Ala Arg Arg  
           20                                  25                                  30  
 Met Trp Ala Ser Ala Gln Asn Ile Ser Gly Ala Gly Trp Ser Gly Met  
           35                                  40                                  45  
 Ala Glu Ala Thr Ser Leu Asp Thr Met Ala Gln Met Asn Gln Ala Phe  
           50                                  55                                  60  
 Arg Asn Ile Val Asn Met Leu His Gly Val Arg Asp Gly Leu Val Arg  
 65                                  70                                  75                                  80  
 Asp Ala Asn Asn Tyr Glu Gln Gln Glu Gln Ala Ser Gln Gln Ile Leu  
                                   85                                  90                                  95  
 Ser Ser

<210> 182  
 <211> 297  
 <212> DNA  
 <213> Mycobacterium tuberculosis

<400> 182  
 atggcctcac gttttatgac ggatccgcat gcgatgcggg acatggcggg ccgttttgag 60  
 gtgcacgccc agacggtgga ggacgaggct cgccggatgt gggcgtccgc gcaaaacatt 120  
 tccggtgcgg gctggagtgg catggccgag gcgacctcgc tagacaccat gacctagatg 180  
 aatcaggcgt ttcgcaacat cgtgaacatg ctgcacgggg tgcgtgacgg gctggttcgc 240  
 gacgccaaca actacgaaca gcaagagcag gcctcccagc agatcctgag cagctag 297

<210> 183  
 <211> 98  
 <212> PRT  
 <213> Mycobacterium tuberculosis

<400> 183  
 Met Ala Ser Arg Phe Met Thr Asp Pro His Ala Met Arg Asp Met Ala  
 1                                  5                                  10                                  15  
 Gly Arg Phe Glu Val His Ala Gln Thr Val Glu Asp Glu Ala Arg Arg  
           20                                  25                                  30  
 Met Trp Ala Ser Ala Gln Asn Ile Ser Gly Ala Gly Trp Ser Gly Met  
           35                                  40                                  45  
 Ala Glu Ala Thr Ser Leu Asp Thr Met Thr Gln Met Asn Gln Ala Phe  
           50                                  55                                  60  
 Arg Asn Ile Val Asn Met Leu His Gly Val Arg Asp Gly Leu Val Arg  
 65                                  70                                  75                                  80

Asp Ala Asn Asn Tyr Glu Gln Gln Glu Gln Ala Ser Gln Gln Ile Leu  
85 90 95

Ser Ser

<210> 184  
<211> 297  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 184  
atgacctcgc gttttatgac ggatccgcac gcgatgcggg acatggcggg ccgttttgag 60  
gtgcacgccc agacggtgga ggacgaggct cgccggatgt gggcgtccgc gcaaaacatt 120  
tccggcgccg gctggagtgg catggccgag gcgacctcgc tagacaccat gaccagatg 180  
aatcaggcgt ttcgcaacat cgtgaacatg ctgcacgggg tgcgtgacgg gctggttcgc 240  
gacgccaaca actacgaaca gcaagagcag gcctcccagc agatcctcag cagctga 297

<210> 185  
<211> 98  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 185

Met Thr Ser Arg Phe Met Thr Asp Pro His Ala Met Arg Asp Met Ala  
1 5 10 15  
Gly Arg Phe Glu Val His Ala Gln Thr Val Glu Asp Glu Ala Arg Arg  
20 25 30  
Met Trp Ala Ser Ala Gln Asn Ile Ser Gly Ala Gly Trp Ser Gly Met  
35 40 45  
Ala Glu Ala Thr Ser Leu Asp Thr Met Thr Gln Met Asn Gln Ala Phe  
50 55 60  
Arg Asn Ile Val Asn Met Leu His Gly Val Arg Asp Gly Leu Val Arg  
65 70 75 80  
Asp Ala Asn Asn Tyr Glu Gln Gln Glu Gln Ala Ser Gln Gln Ile Leu  
85 90 95

Ser Ser

<210> 186  
<211> 20  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 186  
ggaatgaaaa ggggtttgtg 20

<210> 187  
<211> 20  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 187  
gaccacgccc gcgccgtgtg 20

<210> 188  
<211> 27  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 188  
gcaacacccg ggatgtcgca gattatg 27

<210> 189  
<211> 30  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 189  
ctaagcttgg atccctagcc gcccacttg 30

<210> 190  
<211> 22  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 190  
gaatatttga aagggattcg tg 22

<210> 191  
<211> 30  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 191  
ctactaagct tggatcctta gtctccggcg 30

<210> 192  
<211> 27  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 192  
gcaacacccg ggggtgtcgca gagtatg 27

<210> 193  
 <211> 30  
 <212> DNA  
 <213> Mycobacterium tuberculosis

<400> 193  
 ctactaagct tggatcctta gtctccggcg 30

<210> 194  
 <211> 381  
 <212> DNA  
 <213> Mycobacterium tuberculosis

<220>  
 <221> CDS  
 <222> (91)..(378)

<400> 194  
 ggccgcccgt acctatgtgg ccgccgatgc tgcggacgcg tcgacctata ccgggttctg 60

atcgaaccct gctgaccgag aggacttgtg atg tcg caa atc atg tac aac tac 114  
 Met Ser Gln Ile Met Tyr Asn Tyr  
 1 5

ccc gcg atg ttg ggt cac gcc ggg gat atg gcc gga tat gcc ggc acg 162  
 Pro Ala Met Leu Gly His Ala Gly Asp Met Ala Gly Tyr Ala Gly Thr  
 10 15 20

ctg cag agc ttg ggt gcc gag atc gcc gtg gag cag gcc gcg ttg cag 210  
 Leu Gln Ser Leu Gly Ala Glu Ile Ala Val Glu Gln Ala Ala Leu Gln  
 25 30 35 40

agt gcg tgg cag ggc gat acc ggg atc acg tat cag gcg tgg cag gca 258  
 Ser Ala Trp Gln Gly Asp Thr Gly Ile Thr Tyr Gln Ala Trp Gln Ala  
 45 50 55

cag tgg aac cag gcc atg gaa gat ttg gtg cgg gcc tat cat gcg atg 306  
 Gln Trp Asn Gln Ala Met Glu Asp Leu Val Arg Ala Tyr His Ala Met  
 60 65 70

tcc agc acc cat gaa gcc aac acc atg gcg atg atg gcc cgc gac acc 354  
 Ser Ser Thr His Glu Ala Asn Thr Met Ala Met Met Ala Arg Asp Thr  
 75 80 85

gcc gaa gcc gcc aaa tgg ggc ggc tag 381  
 Ala Glu Ala Ala Lys Trp Gly Gly  
 90 95

<210> 195  
 <211> 96  
 <212> PRT  
 <213> Mycobacterium tuberculosis

<400> 195



Met Ser Gln Ile Met Tyr Asn Tyr Pro Ala Met Leu Gly His Ala Gly  
1 5 10 15

Asp Met Ala Gly Tyr Ala Gly Thr Leu Gln Ser Leu Gly Ala Glu Ile  
20 25 30

Ala Val Glu Gln Ala Ala Leu Gln Ser Ala Trp Gln Gly Asp Thr Gly  
35 40 45

Ile Thr Tyr Gln Ala Trp Gln Ala Gln Trp Asn Gln Ala Met Glu Asp  
50 55 60

Leu Val Arg Ala Tyr His Ala Met Ser Ser Thr His Glu Ala Asn Thr  
65 70 75 80

Met Ala Met Met Ala Arg Asp Thr Ala Glu Ala Ala Lys Trp Gly Gly  
85 90 95

<210> 196  
<211> 363  
<212> DNA  
<213> Mycobacterium tuberculosis  
  
<220>  
<221> CDS  
<222> (1)..(360)

<400> 196  
gtg tcg cag agt atg tac agc tac ccg gcg atg acg gcc aat gtc gga 48  
Val Ser Gln Ser Met Tyr Ser Tyr Pro Ala Met Thr Ala Asn Val Gly  
1 5 10 15  
  
gac atg gcc ggt tat acg ggc acg acg cag agc ttg ggg gcc gat atc 96  
Asp Met Ala Gly Tyr Thr Gly Thr Thr Gln Ser Leu Gly Ala Asp Ile  
20 25 30  
  
gcc agt gag cgc acc gcg ccg tcg cgt gct tgc caa ggt gat ctc ggg 144  
Ala Ser Glu Arg Thr Ala Pro Ser Arg Ala Cys Gln Gly Asp Leu Gly  
35 40 45  
  
atg agt cat cag gac tgg cag gcc cag tgg aat cag gcc atg gag gct 192  
Met Ser His Gln Asp Trp Gln Ala Gln Trp Asn Gln Ala Met Glu Ala  
50 55 60  
  
ctc gcg cgg gcc tac cgt cgg tgc cgg cga gca cta cgc cag atc ggg 240  
Leu Ala Arg Ala Tyr Arg Arg Cys Arg Arg Ala Leu Arg Gln Ile Gly  
65 70 75 80  
  
gtg ctg gaa agg ccg gta ggc gat tcg tca gac tgc gga acg att agg 288  
Val Leu Glu Arg Pro Val Gly Asp Ser Ser Asp Cys Gly Thr Ile Arg

				85				90				95				
gtg	ggg	tcg	ttc	cgg	ggt	cgg	tgg	ctg	gac	ccg	cgc	cat	gcg	ggt	cca	336
Val	Gly	Ser	Phe	Arg	Gly	Arg	Trp	Leu	Asp	Pro	Arg	His	Ala	Gly	Pro	
				100				105				110				

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<210> 197
<211> 120
<212> PRT
<213> Mycobacterium tuberculosis

<400> 197
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Asp Met Ala Gly Tyr Thr Gly Thr Thr Gln Ser Leu Gly Ala Asp Ile  
20 25 30

Met Ser His Gln Asp Trp Gln Ala Gln Trp Asn Gln Ala Met Glu Ala  
50 55 60

Val Leu Glu Arg Pro Val Gly Asp Ser Ser Asp Cys Gly Thr Ile Arg  
85 90 95

Ala Thr Ala Ala Asp Ala Gly Asp  
115 120

<220>  
<221> CDS

<222> (1) .. (288)

<400> 198

atg	tcg	cag	att	atg	tac	aac	tat	ccg	gcg	atg	atg	gct	cat	gcc	ggg	48
Met	Ser	Gln	Ile	Met	Tyr	Asn	Tyr	Pro	Ala	Met	Met	Ala	His	Ala	Gly	
1				5					10					15		

gac	atg	gcc	ggg	tat	gcg	ggc	acg	ctg	cag	agc	ttg	ggg	gcc	gat	atc	96
Asp	Met	Ala	Gly	Tyr	Ala	Gly	Thr	Leu	Gln	Ser	Leu	Gly	Ala	Asp	Ile	
			20					25					30			

gcc	agt	gag	cag	gcc	gtg	ctg	tcc	agt	gct	tgg	cag	ggg	gat	acc	ggg	144
Ala	Ser	Glu	Gln	Ala	Val	Leu	Ser	Ser	Ala	Trp	Gln	Gly	Asp	Thr	Gly	
		35					40					45				

atc	acg	tat	cag	ggc	tgg	cag	acc	cag	tgg	aac	cag	gcc	cta	gag	gat	192
Ile	Thr	Tyr	Gln	Gly	Trp	Gln	Thr	Gln	Trp	Asn	Gln	Ala	Leu	Glu	Asp	
	50					55					60					

ctg	gtg	cgg	gcc	tat	cag	tcg	atg	tct	ggc	acc	cat	gag	tcc	aac	acc	240
Leu	Val	Arg	Ala	Tyr	Gln	Ser	Met	Ser	Gly	Thr	His	Glu	Ser	Asn	Thr	
65					70				75					80		

atg	gcg	atg	ttg	gct	cga	gat	ggg	gcc	gaa	gcc	gcc	aag	tgg	ggc	ggc	288
Met	Ala	Met	Leu	Ala	Arg	Asp	Gly	Ala	Glu	Ala	Ala	Lys	Trp	Gly	Gly	
				85				90						95		

tag																291
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<210> 199

<211> 96

<212> PRT

<213> Mycobacterium tuberculosis

<400> 199

Met	Ser	Gln	Ile	Met	Tyr	Asn	Tyr	Pro	Ala	Met	Met	Ala	His	Ala	Gly
1				5					10					15	

Asp	Met	Ala	Gly	Tyr	Ala	Gly	Thr	Leu	Gln	Ser	Leu	Gly	Ala	Asp	Ile
			20					25					30		

Ala	Ser	Glu	Gln	Ala	Val	Leu	Ser	Ser	Ala	Trp	Gln	Gly	Asp	Thr	Gly
		35					40					45			

Ile	Thr	Tyr	Gln	Gly	Trp	Gln	Thr	Gln	Trp	Asn	Gln	Ala	Leu	Glu	Asp
	50					55					60				

Leu	Val	Arg	Ala	Tyr	Gln	Ser	Met	Ser	Gly	Thr	His	Glu	Ser	Asn	Thr
65					70				75					80	

Met Ala Met Leu Ala Arg Asp Gly Ala Glu Ala Ala Lys Trp Gly Gly  
85 90 95

<210> 200  
<211> 60  
<212> DNA  
<213> Mycobacterium tuberculosis

<220>  
<221> CDS  
<222> (1)..(60)

<400> 200  
atg tcg cag att atg tac aac tat ccg gcg atg atg gct cat gcc ggg 48  
Met Ser Gln Ile Met Tyr Asn Tyr Pro Ala Met Met Ala His Ala Gly  
1 5 10 15

gac atg gcc ggt 60  
Asp Met Ala Gly  
20

<210> 201  
<211> 20  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 201

Met Ser Gln Ile Met Tyr Asn Tyr Pro Ala Met Met Ala His Ala Gly  
1 5 10 15

Asp Met Ala Gly  
20

<210> 202  
<211> 60  
<212> DNA  
<213> Mycobacterium tuberculosis

<220>  
<221> CDS  
<222> (1)..(60)

<400> 202  
atg atg gct cat gcc ggg gac atg gcc ggt tat gcg ggc acg ctg cag 48  
Met Met Ala His Ala Gly Asp Met Ala Gly Tyr Ala Gly Thr Leu Gln  
1 5 10 15

agc ttg ggg gcc 60  
Ser Leu Gly Ala  
20

<210> 203  
<211> 20  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 203

Met Met Ala His Ala Gly Asp Met Ala Gly Tyr Ala Gly Thr Leu Gln  
1 5 10 15

Ser Leu Gly Ala  
20

<210> 204  
<211> 60  
<212> DNA  
<213> Mycobacterium tuberculosis

<220>  
<221> CDS  
<222> (1)..(60)

<400> 204  
tat gcg ggc acg ctg cag agc ttg ggg gcc gat atc gcc agt gag cag 48  
Tyr Ala Gly Thr Leu Gln Ser Leu Gly Ala Asp Ile Ala Ser Glu Gln  
1 5 10 15

gcc gtg ctg tcc 60  
Ala Val Leu Ser  
20

<210> 205  
<211> 20  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 205

Tyr Ala Gly Thr Leu Gln Ser Leu Gly Ala Asp Ile Ala Ser Glu Gln  
1 5 10 15

Ala Val Leu Ser  
20

<210> 206  
<211> 60  
<212> DNA  
<213> Mycobacterium tuberculosis

<220>  
<221> CDS  
<222> (1)..(60)

<400> 206  
 gat atc gcc agt gag cag gcc gtg ctg tcc agt gct tgg cag ggt gat 48  
 Asp Ile Ala Ser Glu Gln Ala Val Leu Ser Ser Ala Trp Gln Gly Asp  
 1 5 10 15

acc ggg atc acg 60  
 Thr Gly Ile Thr  
 20

<210> 207  
 <211> 20  
 <212> PRT  
 <213> Mycobacterium tuberculosis

<400> -207  
 Asp Ile Ala Ser Glu Gln Ala Val Leu Ser Ser Ala Trp Gln Gly Asp  
 1 5 10 15

Thr Gly Ile Thr  
 20

<210> 208  
 <211> 60  
 <212> DNA  
 <213> Mycobacterium tuberculosis

<220>  
 <221> CDS  
 <222> (1)..(60)

<400> 208  
 agt gct tgg cag ggt gat acc ggg atc acg tat cag ggc tgg cag acc 48  
 Ser Ala Trp Gln Gly Asp Thr Gly Ile Thr Tyr Gln Gly Trp Gln Thr  
 1 5 10 15

cag tgg aac cag 60  
 Gln Trp Asn Gln  
 20

<210> 209  
 <211> 20  
 <212> PRT  
 <213> Mycobacterium tuberculosis

<400> 209  
 Ser Ala Trp Gln Gly Asp Thr Gly Ile Thr Tyr Gln Gly Trp Gln Thr  
 1 5 10 15

Gln Trp Asn Gln

<210> 210  
 <211> 60  
 <212> DNA  
 <213> Mycobacterium tuberculosis

<220>  
 <221> CDS  
 <222> (1)..(60)

<400> 210  
 tat cag ggc tgg cag acc cag tgg aac cag gcc cta gag gat ctg gtg 48  
 Tyr Gln Gly Trp Gln Thr Gln Trp Asn Gln Ala Leu Glu Asp Leu Val  
 1 5 10 15

cgg gcc tat cag 60  
 Arg Ala Tyr Gln  
 20

<210> 211  
 <211> 20  
 <212> PRT  
 <213> Mycobacterium tuberculosis

<400> 211

Tyr Gln Gly Trp Gln Thr Gln Trp Asn Gln Ala Leu Glu Asp Leu Val  
 1 5 10 15

Arg Ala Tyr Gln  
 20

<210> 212  
 <211> 60  
 <212> DNA  
 <213> Mycobacterium tuberculosis

<220>  
 <221> CDS  
 <222> (1)..(60)

<400> 212  
 gcc cta gag gat ctg gtg cgg gcc tat cag tcg atg tct ggc acc cat 48  
 Ala Leu Glu Asp Leu Val Arg Ala Tyr Gln Ser Met Ser Gly Thr His  
 1 5 10 15

gag tcc aac acc 60  
 Glu Ser Asn Thr  
 20

<210> 213

<211> 20  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 213

Ala Leu Glu Asp Leu Val Arg Ala Tyr Gln Ser Met Ser Gly Thr His  
1 5 10 15

Glu Ser Asn Thr  
20

<210> 214  
<211> 60  
<212> DNA  
<213> Mycobacterium tuberculosis

<220>  
<221> CDS  
<222> (1)..(60)

<400> 214  
tcg atg tct ggc acc cat gag tcc aac acc atg gcg atg ttg gct cga 48  
Ser Met Ser Gly Thr His Glu Ser Asn Thr Met Ala Met Leu Ala Arg  
1 5 10 15

gat ggg gcc gaa 60  
Asp Gly Ala Glu  
20

<210> 215  
<211> 20  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 215

Ser Met Ser Gly Thr His Glu Ser Asn Thr Met Ala Met Leu Ala Arg  
1 5 10 15

Asp Gly Ala Glu  
20

<210> 216  
<211> 48  
<212> DNA  
<213> Mycobacterium tuberculosis

<220>  
<221> CDS  
<222> (1)..(48)



<400> 216  
 atg gcg atg ttg gct cga gat ggg gcc gaa gcc gcc aag tgg ggc ggc 48  
 Met Ala Met Leu Ala Arg Asp Gly Ala Glu Ala Ala Lys Trp Gly Gly  
 1 5 10 15

<210> 217  
 <211> 16  
 <212> PRT  
 <213> Mycobacterium tuberculosis

<400> 217  
 Met Ala Met Leu Ala Arg Asp Gly Ala Glu Ala Ala Lys Trp Gly Gly  
 1 5 10 15

<210> 218  
 <211> 54  
 <212> DNA  
 <213> Mycobacterium tuberculosis

<220>  
 <221> CDS  
 <222> (1)..(54)

<400> 218  
 atg tcg caa atc atg tac aac tac ccc gcg atg ttg ggt cac gcc ggc 48  
 Met Ser Gln Ile Met Tyr Asn Tyr Pro Ala Met Leu Gly His Ala Gly  
 1 5 10 15

gat atg 54  
 Asp Met

<210> 219  
 <211> 18  
 <212> PRT  
 <213> Mycobacterium tuberculosis

<400> 219  
 Met Ser Gln Ile Met Tyr Asn Tyr Pro Ala Met Leu Gly His Ala Gly  
 1 5 10 15

Asp Met

<210> 220  
 <211> 54  
 <212> DNA  
 <213> Mycobacterium tuberculosis

<220>

<221> CDS  
<222> (1)..(54)

<400> 220  
atg ttg ggt cac gcc ggg gat atg gcc gga tat gcc ggc acg ctg cag 48  
Met Leu Gly His Ala Gly Asp Met Ala Gly Tyr Ala Gly Thr Leu Gln  
1 5 10 15  
  
agc ttg 54  
Ser Leu

<210> 221  
<211> 18  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 221  
  
Met Leu Gly His Ala Gly Asp Met Ala Gly Tyr Ala Gly Thr Leu Gln  
1 5 10 15  
  
Ser Leu

<210> 222  
<211> 54  
<212> DNA  
<213> Mycobacterium tuberculosis

<220>  
<221> CDS  
<222> (1)..(54)

<400> 222  
tat gcc ggc acg ctg cag agc ttg ggt gcc gag atc gcc gtg gag cag 48  
Tyr Ala Gly Thr Leu Gln Ser Leu Gly Ala Glu Ile Ala Val Glu Gln  
1 5 10 15  
  
gcc gcg 54  
Ala Ala

<210> 223  
<211> 18  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 223  
  
Tyr Ala Gly Thr Leu Gln Ser Leu Gly Ala Glu Ile Ala Val Glu Gln  
1 5 10 15

Ala Ala

<210> 224  
<211> 54  
<212> DNA  
<213> Mycobacterium tuberculosis

<220>  
<221> CDS  
<222> (1)..(54)

<400> 224  
gag atc gcc gtg gag cag gcc gcg ttg cag agt gcg tgg cag ggc gat 48  
Glu Ile Ala Val Glu Gln Ala Ala Leu Gln Ser Ala Trp Gln Gly Asp  
1 5 10 15

acc ggg 54  
Thr Gly

<210> 225  
<211> 18  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 225

Glu Ile Ala Val Glu Gln Ala Ala Leu Gln Ser Ala Trp Gln Gly Asp  
1 5 10 15

Thr Gly

<210> 226  
<211> 54  
<212> DNA  
<213> Mycobacterium tuberculosis

<220>  
<221> CDS  
<222> (1)..(54)

<400> 226  
agt gcg tgg cag ggc gat acc ggg atc acg tat cag gcg tgg cag gca 48  
Ser Ala Trp Gln Gly Asp Thr Gly Ile Thr Tyr Gln Ala Trp Gln Ala  
1 5 10 15

cag tgg 54  
Gln Trp

<210> 227  
 <211> 18  
 <212> PRT  
 <213> Mycobacterium tuberculosis

<400> 227

Ser	Ala	Trp	Gln	Gly	Asp	Thr	Gly	Ile	Thr	Tyr	Gln	Ala	Trp	Gln	Ala
1				5					10					15	

Gln Trp

<210> 228  
 <211> 51  
 <212> DNA  
 <213> Mycobacterium tuberculosis

<220>  
 <221> CDS  
 <222> (1)..(51)

tat	cag	gcg	tgg	cag	gca	cag	tgg	aac	cag	gcc	atg	gaa	gat	ttg	gtg	48
Tyr	Gln	Ala	Trp	Gln	Ala	Gln	Trp	Asn	Gln	Ala	Met	Glu	Asp	Leu	Val	
1				5					10					15		

cgg	51
Arg	

<210> 229  
 <211> 17  
 <212> PRT  
 <213> Mycobacterium tuberculosis

<400> 229

Tyr	Gln	Ala	Trp	Gln	Ala	Gln	Trp	Asn	Gln	Ala	Met	Glu	Asp	Leu	Val
1				5					10					15	

Arg

<210> 230  
 <211> 54  
 <212> DNA  
 <213> Mycobacterium tuberculosis

<220>  
 <221> CDS

<222> (1)..(54)

<400> 230

gcc atg gaa gat ttg gtg cgg gcc tat cat gcg atg tcc agc acc cat	48
Ala Met Glu Asp Leu Val Arg Ala Tyr His Ala Met Ser Ser Thr His	
1 5 10 15	

gaa gcc	54
Glu Ala	

<210> 231

<211> 18

<212> PRT

<213> Mycobacterium tuberculosis

<400> 231

Ala Met Glu Asp Leu Val Arg Ala Tyr His Ala Met Ser Ser Thr His	
1 5 10 15	

Glu Ala

<210> 232

<211> 54

<212> DNA

<213> Mycobacterium tuberculosis

<220>

<221> CDS

<222> (1)..(54)

<400> 232

gcg atg tcc agc acc cat gaa gcc aac acc atg gcg atg atg gcc cgc	48
Ala Met Ser Ser Thr His Glu Ala Asn Thr Met Ala Met Met Ala Arg	
1 5 10 15	

gac acg	54
Asp Thr	

<210> 233

<211> 18

<212> PRT

<213> Mycobacterium tuberculosis

<400> 233

Ala Met Ser Ser Thr His Glu Ala Asn Thr Met Ala Met Met Ala Arg	
1 5 10 15	

Asp Thr

<210> 234  
<211> 48  
<212> DNA  
<213> Mycobacterium tuberculosis

<220>  
<221> CDS  
<222> (1)..(48)

<400> 234  
atg gcg atg atg gcc cgc gac acc gcc gaa gcc gcc aaa tgg ggc ggc 48  
Met Ala Met Met Ala Arg Asp Thr Ala Glu Ala Ala Lys Trp Gly Gly  
1 5 10 15

<210> 235  
<211> 16  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 235  
Met Ala Met Met Ala Arg Asp Thr Ala Glu Ala Ala Lys Trp Gly Gly  
1 5 10 15

<210> 236  
<211> 60  
<212> DNA  
<213> Mycobacterium tuberculosis

<220>  
<221> CDS  
<222> (1)..(60)

<400> 236  
gtg tcg cag agt atg tac agc tac ccg gcg atg acg gcc aat gtc gga 48  
Val Ser Gln Ser Met Tyr Ser Tyr Pro Ala Met Thr Ala Asn Val Gly  
1 5 10 15

gac atg gcc ggt 60  
Asp Met Ala Gly  
20

<210> 237  
<211> 20  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 237  
Val Ser Gln Ser Met Tyr Ser Tyr Pro Ala Met Thr Ala Asn Val Gly

1 5 10 15

Asp Met Ala Gly  
20

<210> 238  
<211> 60  
<212> DNA  
<213> Mycobacterium tuberculosis

<220>  
<221> CDS  
<222> (1)..(60)

<400> 238  
atg acg gcc aat gtc gga gac atg gcc ggt tat acg ggc acg acg cag 48  
Met Thr Ala Asn Val Gly Asp Met Ala Gly Tyr Thr Gly Thr Thr Gln  
1 5 10 15

agc ttg ggg gcc 60  
Ser Leu Gly Ala  
20

<210> 239  
<211> 20  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 239

Met Thr Ala Asn Val Gly Asp Met Ala Gly Tyr Thr Gly Thr Thr Gln  
1 5 10 15

Ser Leu Gly Ala  
20

<210> 240  
<211> 60  
<212> DNA  
<213> Mycobacterium tuberculosis

<220>  
<221> CDS  
<222> (1)..(60)

<400> 240  
tat acg ggc acg acg cag agc ttg ggg gcc gat atc gcc agt gag cgc 48  
Tyr Thr Gly Thr Thr Gln Ser Leu Gly Ala Asp Ile Ala Ser Glu Arg  
1 5 10 15

acc gcg ccg tcg 60  
Thr Ala Pro Ser

20

<210> 241  
<211> 20  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 241

Tyr Thr Gly Thr Thr Gln Ser Leu Gly Ala Asp Ile Ala Ser Glu Arg  
1 5 10 15

Thr Ala Pro Ser  
20

<210> 242  
<211> 60  
<212> DNA  
<213> Mycobacterium tuberculosis

<220>  
<221> CDS  
<222> (1)..(60)

<400> 242  
gat atc gcc agt gag cgc acc gcg ccg tcg cgt gct tgc caa ggt gat 48  
Asp Ile Ala Ser Glu Arg Thr Ala Pro Ser Arg Ala Cys Gln Gly Asp  
1 5 10 15

ctc ggg atg agt 60  
Leu Gly Met Ser  
20

<210> 243  
<211> 20  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 243

Asp Ile Ala Ser Glu Arg Thr Ala Pro Ser Arg Ala Cys Gln Gly Asp  
1 5 10 15

Leu Gly Met Ser  
20

<210> 244  
<211> 60  
<212> DNA  
<213> Mycobacterium tuberculosis



<220>  
<221> CDS  
<222> (1)..(60)

<400> 244  
cgt gct tgc caa ggt gat ctc ggg atg agt cat cag gac tgg cag gcc 48  
Arg Ala Cys Gln Gly Asp Leu Gly Met Ser His Gln Asp Trp Gln Ala  
1 5 10 15  
  
cag tgg aat cag 60  
Gln Trp Asn Gln  
20

<210> 245  
<211> 20  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 245  
  
Arg Ala Cys Gln Gly Asp Leu Gly Met Ser His Gln Asp Trp Gln Ala  
1 5 10 15  
  
Gln Trp Asn Gln  
20

<210> 246  
<211> 60  
<212> DNA  
<213> Mycobacterium tuberculosis

<220>  
<221> CDS  
<222> (1)..(60)

<400> 246  
cat cag gac tgg cag gcc cag tgg aat cag gcc atg gag gct ctc gcg 48  
His Gln Asp Trp Gln Ala Gln Trp Asn Gln Ala Met Glu Ala Leu Ala  
1 5 10 15  
  
cgg gcc tac cgt 60  
Arg Ala Tyr Arg  
20

<210> 247  
<211> 20  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 247  
  
His Gln Asp Trp Gln Ala Gln Trp Asn Gln Ala Met Glu Ala Leu Ala  
1 5 10 15

Arg Ala Tyr Arg  
20

<210> 248  
<211> 60  
<212> DNA  
<213> Mycobacterium tuberculosis

<220>  
<221> CDS  
<222> (1)..(60)

<400> 248  
gcc atg gag gct ctc gcg cgg gcc tac cgt cgg tgc cgg cga gca cta 48  
Ala Met Glu Ala Leu Ala Arg Ala Tyr Arg Arg Cys Arg Arg Ala Leu  
1 5 10 15

cgc cag atc ggg 60  
Arg Gln Ile Gly  
20

<210> 249  
<211> 20  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 249

Ala Met Glu Ala Leu Ala Arg Ala Tyr Arg Arg Cys Arg Arg Ala Leu  
1 5 10 15

Arg Gln Ile Gly  
20

<210> 250  
<211> 60  
<212> DNA  
<213> Mycobacterium tuberculosis

<220>  
<221> CDS  
<222> (1)..(60)

<400> 250  
cgg tgc cgg cga gca cta cgc cag atc ggg gtg ctg gaa agg ccg gta 48  
Arg Cys Arg Arg Ala Leu Arg Gln Ile Gly Val Leu Glu Arg Pro Val  
1 5 10 15

ggc gat tcg tca 60  
Gly Asp Ser Ser  
20

<210> 251  
<211> 20  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 251

Arg Cys Arg Arg Ala Leu Arg Gln Ile Gly Val Leu Glu Arg Pro Val  
1 5 10 15

Gly Asp Ser Ser  
20

<210> 252  
<211> 60  
<212> DNA  
<213> Mycobacterium tuberculosis

<220>  
<221> CDS  
<222> (1)..(60)

<400> 252  
gtg ctg gaa agg ccg gta ggc gat tcg tca gac tgc gga acg att agg 48  
Val Leu Glu Arg Pro Val Gly Asp Ser Ser Asp Cys Gly Thr Ile Arg  
1 5 10 15

gtg ggg tcg ttc 60  
Val Gly Ser Phe  
20

<210> 253  
<211> 20  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 253

Val Leu Glu Arg Pro Val Gly Asp Ser Ser Asp Cys Gly Thr Ile Arg  
1 5 10 15

Val Gly Ser Phe  
20

<210> 254  
<211> 60  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 254

gactgcggaa cgattagggg ggggtcggtc cggggtcggt ggctggaccc gcgccatgcg 60

<210> 255  
<211> 20  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 255

Asp Cys Gly Thr Ile Arg Val Gly Ser Phe Arg Gly Arg Trp Leu Asp  
1 5 10 15

Pro Arg His Ala  
20

<210> 256  
<211> 60  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 256  
cggggtcggt ggctggaccc gcgccatgcg ggtccagcca cggccgccga cgccggagac 60

<210> 257  
<211> 20  
<212> PRT  
<213> Mycobacterium tuberculosis

<400> 257

Arg Gly Arg Trp Leu Asp Pro Arg His Ala Gly Pro Ala Thr Ala Ala  
1 5 10 15

Asp Ala Gly Asp  
20